An Address
ON
THE RESULTS OF OPERATION IN 60 CASES OF MALIGNANT DISEASE OF THE BREAST.

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MR. PRESIDENT AND GENTLEMEN,—The subject which I have the honour of bringing before the Medical Society of Cardiff to-night is one of surpassing interest to every medical man. I am especially glad of having the opportunity of speaking on the important matter of mammary cancer in this great town, the centre of a large population. I know that carcinoma of the breast is a prevalent disease in South Wales, and now that some hopes exist of the establishment of an institution where the phenomena of cancerous affections can be studied by experts the more facts we obtain from all parts of the country the better. Moreover, it is very true that some of the most curious and important clinical facts regarding cancer are found in the experience of elderly practitioners, who possess the confidence and secrets of private families, who have watched these cases to their terminations, and who have noticed the extraordinary vagaries and peculiarities which they exhibit.

Before proceeding to the hard-and-fast portion of my paper I would take a summary of the present position with regard to the subject of cancer of the breast and briefly advance my own opinions founded on a now tolerably large experience. You are aware that a controversy has for some time been going on as to who is to claim the credit for the method of extensive operating now in vogue. There can be no doubt that many of our former surgeons, and notably Mr. Moore of the Middlesex Hospital in 1867, advocated strongly very wide and free operating. His views were strongly supported in America by the elder Gross in 1880, and personally I am inclined to attribute to Moore the principal credit for originating very thorough operation in mammary cancer, and I have supported that statement in my book.[1] Sir Mitchell Banks of Liverpool, Mr. Heath, and many other senior London surgeons of the day followed the same practice. Yet it is curious to observe that there were some prominent London surgeons of that period who performed and actually publicly advocated the most imperfect operations, even advising that the axillary glands should be left untouched unless they were obviously infected. The comparative ease and safety with which the breast alone can be removed, leaving cancerous tissues in the axilla, became dangerously fascinating from its very simplicity of performance and speedy healing. Disciples of the imperfect operators became numerous all over the country and incomplete operations were prevalent not only in this country but in others. Under these circumstances the extreme and sweeping operation recently advocated by Halstead acted as a sort of "surgical revival," and, as has happened in religious matters, the backsliders from the true faith often embrace the new manifestations of truth with such astounding vigour that they excel their teachers, and certainly are apt to forget the similar doctrines promulgated by their own countrymen many years before. To Halstead, therefore, may be ascribed the credit of again forcing upon the attention of the profession the importance of very free operating, but I believe that this doctrine, like many others of the best methods of practice in surgery, originated in our own country and we are responsible to no one else for it. I may here express my own opinion that operations demanding division of the clavicle, dissecting out of glands in the neck, and removal of the upper limb and scapula can seldom come within the pale of legitimate surgery.

[1] Diseases of the Breast, p. 383.

Regarding the parasitic origin of cancer of the mamma, as year after year passes I become more and more uncertain in what direction to inquire. Indeed, the matter is still an open one. Of one thing I am certain, that progress in this direction can only be made by proceeding with the utmost caution, collating all facts, clinical and otherwise, with truth and sincerity, and especially observing the results of experimental processes with the most rigid scepticism. Error is so easy, truth is so difficult, to ascertain. And in this, as in many of the difficult problems which beset the profession of medicine, some of the greatest obstacles to real progress are the hurry and inaccuracy of some of the most earnest workers.

In the last six years I have had numerous instances of the difficulties which hinder the early diagnosis of cancer of the breast, and these have been generally instances of small indurations and deep lumps, such as a patient finds quite accidentally. The lesson has been strongly borne home to me that the profession generally cannot be too much aware that the commencement of mammary cancer is insidious, quiet, and often quite painless. Any slight "hardness" or "thickening" perceptible to the fingers laid flat on the mamma of a woman of the age of 40 years or upwards is a sign of the greatest import and demands immediate explanation. The diagnosis of a nodule of cancer from deeply seated cysts has time after time in my practice been shown to be impossible except by exploration. Indeed, dubious tumours in the breast need exploratory operations as much as dubious tumours in the abdomen. It may seem heretical to state that the naked-eye appearances as exposed on exploratory incision are, in my own opinion, more likely to lead the surgeon right than are the results of microscopical examination. I have always found that when I have been in doubt between inflammatory tissue and early cancer the same doubt occurs to the microscopist if only he possesses the somewhat rare attributes of a sceptical mind associated with accuracy of observation. On the other hand, I have known serious prognostical difficulties to arise from relying too certainly upon dubious microscopical appearances. I cannot recommend these observations too strongly to your serious consideration.

I feel sure that the general run of medical men do not fully appreciate the significance to be attached to infection of the axillary glands in mammary cancer. Only since I have been in the habit of removing the pectoral and clearing the axilla in every case has it dawned upon me that the glands are almost universally infected even in the early stages of mammary cancer. Time after time, when competent observers have made the written note "there are no enlarged glands" I have at the operation removed from under the pectoralis minor glands of the size of a hazel nut or almond, distinctly cancerous, which it was impossible to feel, even with the axilla opened, until the pectoralis major was removed. These glands usually adhere closely to the sheath of the axillary vein and the troublesome œdema of the arm so often seen as a sequel of operation for cancer of the breast is too often due to the fact that these important diseased structures have quite escaped observation at the primary operation. I have spoken at some length on this subject, for its vital significance can hardly be over-estimated, and I would conclude by stating my express belief that the being unable to feel enlarged glands in the axilla goes for little or nothing in the diagnosis of early cancer of the breast.

As regards the true value of the operation of removal of the ovaries for recurrent mammary cancer I fear I must say that I regard this proceeding as quite experimental. That a certain number of cases have been benefited I have no doubt; that a number have received no benefit whatever I am equally certain. My own personal experience is limited to two cases. They were both bad types of recurrent cancer in young vascular women. In neither of these did the slightest benefit occur. I also know of three private cases where the operation was performed by other surgeons and no benefit was obtained. I believe that the true reason why improvement—the withering of cancerous nodules, the relief from pain, and so on—has followed removal of the ovaries in certain cases is due to diminished vascularity of the mammary region sometimes caused by the operation. In certain cases of removal of the ovaries the breasts atrophy, hair grows on the lip, the patient generally emaciates, and the mental conditions of the woman become altered and curious. This change, it is well known, is by no means universal or even common, but, should it occur,

the diminution of vascular supply to the mammary regions would certainly markedly arrest the development of mammary cancer. Accordingly I would never perform this operation myself unless the patients and friends distinctly understood its experimental nature and the absolute uncertainty which surrounded its results for good.

A certain number of my cases having had return of the disease after three years I can only adhere to a former statement, which I now publicly and strongly reiterate, that this time is far too short to allow of the term "cure" to be used in this disease. In one of my private cases the husband of the patient, a highly educated man, had read what I regard as the mistaken surgical opinions published on this point. His wife remained well for three years and he joyfully regarded her as "cured." When return took place his disappointment and disgust knew no bounds. I quote his exact words, they are of significance: "I would as soon my wife were under the veriest quack for the future as any member of your profession. Even in your profession published statements cannot be depended upon." I relate this to illustrate how dangerous it is to dogmatise concerning the results of a malady so protean and ill-understood as cancer, and how such methods weaken our position with regard to the educated portion of the public in a manner almost incalculable. I have repeatedly in my book and elsewhere dwelt upon the importance of every medical man understanding and realising the extraordinary differences which exist in pain, in rate of growth, and in virulency, in cancer of the breast in different individuals. It is want of knowledge which leads to belief in vaunted cures, the special drug which has been last taken receiving the credit through ignorance of the pathological changes in the disease. Let me briefly relate a remarkable case to illustrate the peculiarities which occur in the growth of cancer.

Over five years ago I operated upon a woman between 40 and 50 years of age for advanced hard carcinoma occupying a very bad part of the mamma, the sternal margin. As usual the growth had extended deeply into the intercostal space, and I followed it until the internal intercostal muscle had been removed and there seemed to be a serious risk of opening the thoracic cavity. I did not feel at all sure that I had extirpated the disease with that freedom which is so essential in operations for carcinoma. Rather to my surprise this patient remained well for close on five years, when pain and swelling occurred near the sternum and an obvious recurrence showed itself. For this condition I operated early in 1901. I found the sternum infiltrated with growth and was obliged to relinquish the operation. A livid tumour of the size of a large hazel-nut was present at the edge of the sternum. The patient did not see me again for nearly nine months and I wrote to inquire as to her case. She replied that she was so much better she had no cause to see me. On examination of her case I could hardly believe my eyes. The whole disease had disappeared and a deep depressed cicatrix alone remained, similar to that which obtains after removal of necrosed bone. This patient had not been taking violet leaves, cinnamon, or arsenic and quinine; neither had she had the benefit of the aerial therapeutics disseminated by Christian Science. Had one or other of these methods been in vogue what would have been said? If her ovaries had been removed what a triumph for oöphorectomy. What a lesson in humility should such a case teach us, how much we have to learn about the phenomena of cancerous disease.

These remarks would not be complete without reference to the efficacy or otherwise of the x rays upon cancer of the breast. I advised the treatment in one private case, but was not permitted to superintend the method or to watch the results. I can only speak from hearsay that the nodules withered away and great benefit was obtained. It is of the utmost importance that a series of these cases should be observed and that the true results should be published, and that not a few months after supposed "cure." A similar remark may apply to lupus and rodent ulcer treated by the same method. The results of scraping and applying caustic to rodent ulcer are often striking. The whole surface "heals over" and may remain well for months or for years, yet the disease too often returns locally. Can the "light treatment" show permanency of cure? These and many other such considerations point most strongly to the necessity for a laboratory where such questions can be studied, and for a research fund to reward impartial and disinterested observers for giving to the profession the true value of novel methods of treating these maladies.

During the six years ending in August, 1901, I have operated upon 59 cases of mammary carcinoma and one of mammary sarcoma. This list does not take into account many operations performed for recurrent disease, such as nodules in the skin of the chest and extirpation of diseased glands from the axilla. Some of these patients had been operated upon previously by myself and some by other surgeons. I have notes of 12 cases in this period of six years in which operation was refused. In nine of these extensive implication of the skin of the thorax and implication of the glands above the clavicle were the causes assigned for my refusal to operate. I may here mention that most of these were private patients and that the craze termed "Christian Science" was directly responsible for the hopeless and shocking state of a significant number of these deluded women. In one case signs of carcinoma of the spine were evident. In two cases large tumours of the liver coexisted, showing all the clinical symptoms of carcinoma. Two cases out of the 60 among the hospital class were lost sight of. I know that these patients were well two years after operation and they might be admitted into the "two years class" with justice. This leaves 58 cases for relation and discussion. Of the 58 cases particulars are tabulated of 40. The remaining 18 cases have been treated too recently to estimate their ultimate results. Some of them have been operated upon in the last six months, but among these 18 cases there have been two deaths. One was distinctly due to iodoform poisoning the other to bad sepsis. The latter case will receive due notice. In the 40 cases there was only one instance of slight suppuration about the centre of the wound, so that out of 60 cases all ran an aseptic course but two. The operations have been generally of the most extensive character, but healing has been both rapid and sound. In the 18 non-tabulated cases were two of speedy recurrence which will need special mention.

METHOD OF OPERATING.

In all the 60 cases with the exception of two, where the diagnosis was deceptive and which receive special mention, the most thorough operation was practised. The axillary lymphatic tissues especially were carefully removed, and every scrap of fascia, both anteriorly and posteriorly. In cases where the axillary glands were infected, the lower part of the pectoral was removed and in several cases the pectoralis minor was cut across thoroughly to reach and to extirpate a chain of diseased glands extending towards the clavicle. The skin has always been very freely removed, so that in some cases I have been unable to bring it together after operation. I have paid great attention to such points as the warm clothing of the patient, the temperature of the rooms, and especially rapidity in operating. I believe the latter consideration to be of great importance, especially in elderly and bronchitic women. The anæsthetic has generally been gas and ether, followed by chloroform in the later stages of the operation. Drainage has been universally employed, sometimes in more than one part of the wound. It is curious how opinions differ upon the necessity of drainage in these cases. I am a strong advocate for the practice.

I will now mention particulars of two examples of rapid recurrence of disease which occurred in my 18 cases recently operated upon and not tabulated. In the first of these two cases the patient was an unmarried lady, aged about 40 years, of very dark and swarthy complexion, who had a swelling of the right breast which was painful, hot, and throbbing, and which had only been noticed for about two months. The affected organ "stood out" from the thorax and was of the size of a small turnip. It was red and hot and there was a distinct local feeling of elasticity or fluctuation. The temperature was raised at night and the resemblance to abscess was exact. Indeed, the diagnosis of suppuration had been arrived at. But the "peau d'orange" was marked and some enlarged glands were to be found in the axilla. The swelling was incised and was found to be a gelatinous hæmorrhagic growth, breaking down in the centre. Seeing the extensive implication of the skin the whole tumour and integument were removed by a circular incision, leaving a great gap on the thoracic wall of the size of a soup-plate. The pectoral was removed and the axilla was freely cleared. The huge wound was covered with flaps of skin "laid in" from the margin and sewn down with catgut. In about six weeks cicatrisation, extending from many centres, was complete. But about two months after operation very ominous signs showed themselves. These consisted in severe pains shooting down the back of the neck

and round the occiput. The pains became agonising, so as to demand morphia, and soon a swelling was detected behind the pharynx which pushed forward the palate and was obviously a spinal growth. One morning this poor patient was found dead, and her medical attendant who has given me these details had little doubt from the condition of the neck that dislocation had taken place in the upper spinal vertebra, the ligaments being destroyed by the growth. But this, in the absence of post-mortem examination, must remain unconfirmed. The growth was ordinary soft carcinoma of a luxuriant type, the cells being abundant and very large. This case was a typical example of inflamed infiltrating acute carcinoma. Such have been mistaken for abscess on different occasions with disastrous results. We see the best, or worst, examples of this formidable malady in young and especially pregnant women. So bad are the results of operations on these patients that I doubt if it is of much use operating upon them at all. I especially draw attention to this case for another reason. Any surgeon meeting with, operating upon, and publishing results of, this kind of mammary carcinoma will inevitably damage his statistical statements, if these be complete and accurate, as to freedom of his patients from return of disease. And the reverse is true that if the cases be selected and unfavourable ones of this kind be rejected the corresponding results will appear the more excellent.

The second case is an example of what sometimes occurs —namely, that an operation is done when, unhappily, dissemination has already occurred.

On Nov. 12th, 1900, I saw a strong, florid-looking, married lady, aged about 45 years. In the axillary margin of the right mamma was an evident carcinoma with all the clinical signs of the disease well marked. The duration was quite uncertain. At the operation on Nov. 28th a soft mass of carcinoma was found and a very extensive operation was done. The pectoral was removed as well as much diseased axillary lymphoid tissue. Previously to the operation she had complained of "pains in the back" and rheumatic pains in the limbs, and a suspicion was aroused that all was not well. By the spring of 1901 these suspicions were confirmed. She was beginning to lose control over the functions of the bowel and numerous areas of pain and numbness were evident over the lower extremities. She walked with difficulty and had constant pain in the back. She had emaciated greatly and bore the appearances of one dying from an incurable malady. There was no local recurrence, the scar and axilla being quite healthy. I have thought it right to relate this case shortly because I have seen others like it, and no operation, however extensive, can prevent the occurrence of such conditions. Are such cases to be termed "recurrence"? Are they not rather instances of multiple manifestations of disease?

I always make a practice of examining the visceral condition of a patient prior to an operation for mammary cancer and in this way the tumours of the liver before alluded to were discovered. But early carcinoma of the spine is so vague and difficult a disease to diagnose in its early stages that errors are very excusable and difficult to avoid.

I have said that one of the cases where suppuration occurred is only mentioned for completeness. The mischief was slight, limited to one part of the wound, and it speedily subsided. I have only referred to it to make the relation of my cases absolutely accurate. The other, however, which occurred among the 18 recent cases, was of a most disastrous nature, and shows us that even with all modern precautions absolute and certain safety is not obtainable.

The case I now refer to was that of a lady, aged about 50 years, who had a large mammary carcinoma. The operation was very extensive. She had no renal mischief but had a feeble heart and a slight mitral bruit. The operation was performed with perhaps more than usually elaborate precautions. I did not see the case afterwards, but it was left in the hands of a gentleman whose office was especially to manage the after-treatment of operations and who may, therefore, with justice be looked upon as especially skilful in this department. All went well for three days when a blaze of sepsis occurred, and after lingering for about three weeks the patient died. The wound opened and became "dry" in appearance and it was obvious that some very potent factor of mischief had somehow been introduced. Streptococci were found, and the case was treated with anti-streptococcic serum, but with only temporary benefit. Indeed, I have not seen so bad a case of sepsis for many years and it is the only one of the kind that has ever occurred to me in either private or hospital practice. I felt much ashamed of the case and should have been glad not to have been under the necessity of mentioning it, but its importance is undeniable, as showing the possibility of disaster when all precautions are used.

In 38 out of the 40 tabulated cases the operations have been of the most extensive nature, particularly as regards the removal of skin and fascia and axillary lymphatics. The sternal part of the pectoralis major has, in most instances, been removed. The pectoralis minor has been cut across and the fascia cleared from it. If the axillary glands are infected I feel sure that removal of the sternal part of the pectoral muscles is almost a necessity to remove high glandular infection. I have several times discovered by this means small cancerous nodules of the size of a pea lying close under the clavicle. I feel sure that these potent factors of future mischief would have remained undetected had the muscle not been removed. In this matter of removal of the pectoral I venture with all courtesy to differ from Sir Mitchell Banks who holds that the glands can generally be effectually extirpated by forcible retraction of the muscle.[2] I have generally been able to bring the skin together and this, where great tension exists, has been aided much by the making of lateral incisions and extensive dissecting up of the skin above and below. When much skin has had to be sacrificed and a large gap has been left I have filled this in by the process of implantation flaps rather than by Thiersch grafting, which I have found private patients particularly object to.[3] I have mentioned that drainage has been universally employed. In cases of very obese women, when an enormous chasm has been left, I always place a tube in the centre of the wound as well as posteriorly through the lower flap. An accumulation of fluid is very apt to form in such wounds towards the centre or sternal aspect. This is a potent source of danger, for nothing is more apt to become infected by septic organisms that a collection of bloody serum, which is really an attractive and warm culture medium.

Next, as regards the result of these operations. One of the striking general features is the freedom from local recurrences; and, if local recurrences have taken place, they have been of a small or nodulous nature, again easily removed. Such phenomena as œdematous arm, agonising pain, and fungating masses of disease have been conspicuous by their absence. I attribute this largely to the thoroughness with which the axilla has been cleared. That distressing sequel, gigantic œdematous arm, is generally due to infected glands implicating and pressing upon the axillary vein, which were not detected, or only partly removed, at the primary operation. When returns have taken place they have been generally again removeable, and very considerable periods of freedom from further trouble may be confidently expected.

Of the 40 cases, eight patients are found to be well for the highly satisfactory period of five years, going on to six years, four for four years and upwards, seven for three years and upwards, and 11 for two years and upwards. The cases which showed local return within two years need special mention; they have been very strictly classified, and it is only right to point out that a second and slight operation has given to these patients a fresh period of freedom from return. Prominent in this class is Case 2. Here after removal of a small nodule in the scar the patient remained well for over five years. In Case 5 the patient remained well for over three years after removal of a recurrence. In Case 17 the patient has every chance of prolonged good health. In Case 22 after removal of a small nodule the patient remained well for four years and died from a cause unconnected with cancer. In Case 30 the patient succumbed to cardiac disease nearly two years after removal of the nodule mentioned, and in the last case recorded the prospects of the patient are equally good. Thus, it may be said that out of the 40 cases over 30 received untold benefits from the development of modern operative surgery. What a contrast this affords to the long and extensive experience of the late Sir James Paget when he said: "Survivals of three years such as are now often termed 'cures' were not very rare, but I can remember very few who survived without recurrence more than five years."[4]

[2] Transactions of the Medical Society of London, vol. xxiii., p. 201.
[3] Diseases of the Breast, p. 411, plate xvi., Fig. D.
[4] A letter to the author in March, 1896.

TABLE SHOWING RESULTS OF OPERATION IN CASES OF MALIGNANT DISEASE OF THE BREAST.

Case.	Years of age.	Married or single.	History and particulars of case.	Date and nature of operation.	Result.	Period of freedom from return.
1	54	Widow.	Noticed tumour in the left mamma for six months. Hard carcinoma. The patient spare and thin. Several axillary glands enlarged.	Sept. 15th, 1896. Mamma and pectoral removed. All fasciæ and glands as high as clavicle.	Was seen early in 1899, quite well. Present address not known.	3 years.
2	59	Married.	A small tumour of the size of a chestnut at the upper border of the mamma.	Sept. 9th, 1896. Extensive operation. Pectoral fasciæ and glands removed, but not muscle.	In March, 1899 (three years and six months after operation), two small cancerous nodules were excised from the scar. In March, 1900, she was quite well.	3 years and 6 months.
3	53	Married.	Extensive infiltrating carcinoma of the left mamma. Axillary glands implicated.	June, 1894. Extensive operation done. Pectorals and glands freely removed.	Quite well until June, 1898, when rapid ascites set in. The patient died in October. A partial necropsy revealed carcinoma of both ovaries and peritoneum.	4 years.
4	67	—	Atrophic lump of carcinoma in the centre of the left mamma of three years' standing.	May, 1895. Whole mamma and fasciæ removed. Axilla thoroughly cleared. No deposits of cancer found in the glands by the microscope.	Died in 1899 from influenza and bronchitis. There was no return of disease.	4 years.
5	45	Married.	Central carcinoma of 12 months' standing. Glands in axilla involved.	August, 1895. Extensive operation. Pectoral removed. Glands extirpated.	In September, 1896, a small nodule of carcinoma found in centre of axilla scar. This was again removed. Remained well until September, 1899, when the glands in the neck rapidly enlarged and she died with symptoms of cerebral tumours. No necropsy allowed.	1 year.
6	50	Widow.	A small nodule of carcinoma at the lower part of the left mamma, of about the size of a hazel-nut.	March, 1896. Very free extirpation. Fasciæ and axillary glands removed, but not pectoral. Carcinoma found in the glands by the microscope.	Seen February, 1901, well.	Nearly 5 years.
7	48	Married.	Extensive carcinoma of the right mamma, the skin, and the glands, of at least nine months' duration.	June 20th, 1896. Extensive operation. Skin, glands, and pectorals removed. Skin-grafting employed.	Remained well for 10 months. Then signs of spinal mischief came on. The patient died paraplegic, with incontinence of urine and fæces, in two years. There was no local recurrence.	10 months.
8	58	Single.	A large elastic tumour in the centre of the left mamma, noticed for 12 months. Once some bloody discharge escaped from the nipple. Much difference of opinion regarding the case.	August, 1896. A cyst found on exploratory incision which contained bloody fluid. On one part of its wall was a nodule of carcinoma of the size of a hazel-nut. The fasciæ and axillary glands were freely removed.	The patient has remained quite well.	5 years.
9	47	Married.	A red itching patch round the site of a scar close to the right nipple for at least four years. When the patient was seen the disease had spread until the whole skin over the mamma was red, glazed, and shining.	September, 1897. The whole patch excised and the axilla cleared. Pectorals removed. The wound measured 14 inches by 12 inches. Extensive skin-grafting employed.	In January, 1899, extensive disease appeared in the cervical glands. There was no local return.	1 year and 3 months.
10	51	Single.	Hard but extensive carcinoma of the centre of the right mamma under the nipple which was deeply retracted. A history of 12 months' duration.	"Complete operation," October, 1896. Pectoral removed and the infected axillary glands.	Remained well and able to work as a servant. In June, 1901, nearly five years after operation, the patient came with a small hard gland in the neck on the right side. This proved to be carcinomatous. There was no local recurrence, the scar and the axilla being quite healthy.	Nearly 5 years.
11	52	Married.	An elastic swelling in the centre of the left mamma of the size of an egg. It had been punctured twice and fluid had been drawn off. A history of about eight months' duration.	January, 1898. Exploratory incision revealed a curious tumour with cysts and solid growth. I opined it to be a cystic sarcoma, but microscopically it was a typical "duct-cancer." One of the axillary glands contained a nodule of growth of columnar epithelium.	Seen in 1901, quite well.	3 years.
12	60	Single.	Extensive infiltrating carcinoma of the right mamma. The skin and axillary glands involved. Probable history extending over two years. Woman of great stature and physique.	February, 1897. The whole mamma with the skin removed. Pectorals also and axillary glands. An enormous wound left. Healed by skin-grafting. Convalescence retarded by mania.	Remained well for over a year. There was no local return. One year and three months after operation signs of cancer of spine were evident, from which she sank.	1 year.
13	68	Widow.	A hard carcinoma of the size of an orange in the right mamma. Skin dimpled, nipple retracted. History of duration dubious.	June, 1897. Very free removal. The whole pectoral removed, and pectoralis minor divided. Many infected glands taken away.	On January, 1901, the patient wrote to say that she remained perfectly well.	Nearly 4 years.

TABLE SHOWING RESULTS OF OPERATION IN CASES OF MALIGNANT DISEASE OF THE BREAST—(*Continued*).

Case.	Years of age.	Married or single.	History and particulars of case.	Date and nature of operation.	Result.	Period of freedom from return.
14	37	Married.	A small cystic tumour at the base of the nipple on the left side. Occasional bloody discharge. A history of about 12 months' duration. Section showed a semi-solid tumour of dubious nature.	July, 1897. The whole mamma removed, with fasciæ and axillary glands. Pectoral removed. No deposits found in the glands by the microscope. The tumour was a duct-cancer.	This patient remains well at the present time.	Nearly 5 years.
15	57	Widow.	A large tumour with much infiltration of the skin and obvious gland implication on the right side. Duration quite uncertain.	Dec. 4th, 1897. Extensive operation; all skin over the mamma removed, with pectorals and glands from the axilla. Skin-grafting had to be employed.	June 16th, 1898. Recurrence in the skin all over the thorax and the abdomen. Scores of small tumours of the size of peas or nuts were slowly forming. The glands in the neck were implicated. The patient was alive in August, 1898, and was getting great relief from thyroid extract.	5 months.
16	63	Single.	In the right mamma an elastic tumour of the size of an orange. Time of existence quite uncertain.	Jan. 17th, 1898. Exploration showed carcinoma with a large hæmorrhagic cyst. A very extensive operation was done. The pectoral was removed as well as the axillary contents.	The patient remained quite well and was seen in August, 1900, in good health. Now address cannot be found.	1 year, 8 months.
17	36	Married.	A healthy young woman, the mother of two children whom she had nursed. At the base of the left nipple was a small circular patch of dermatitis maligna, Paget's disease. Seen by several surgeons, all of whom advised excision of the nipple and the areola. The mamma and the glands seemed not to be affected.	May, 1899. Acting upon my advice the whole mamma was freely removed with the integument and fasciæ. The incisions ran at least four inches from the nipple, the breast being voluminous. Dr. Rolleston examined the mamma carefully and sections subjacent to the diseased skin appeared healthy. I felt confident that the disease was cured and got rid of for ever.	Remained quite well until the spring of 1901 when to my surprise she presented two nodules of the size of a pea in the scar. These were freely excised and turned out to be spheroidal carcinoma. The patient has since remained well.	2 years.
18	50	Single.	A small hard carcinoma in the left mamma, noticed for six months.	March, 1899. Free removal of the mamma, skin, fasciæ, pectoral, and all axillary glands. No sign of carcinoma found there.	June, 1901. Remains quite well.	2 years.
19	38	Single.	A carcinomatous tumour of the size of an orange below the nipple on the right side. History suggestive of chronic mastitis previously.	March, 1897. The whole mamma removed with axillary glands, pectoral, and fascia.	The patient wrote in June, 1901, to say that she was then married and in good health.	Over 4 years.
20	38	Married.	A bloody discharge noticed from the left nipple for many months. A swelling of the size of a large almond at the left side of the areola. The late Sir James Paget saw the case several times and advised that only the cyst should be removed. He was strongly against removal of the entire mamma.	June 18th, 1896. An exploratory incision revealed a cyst with blood-stained contents and abundant growth on its walls. The breast tissue was indurated with several small cysts. A wedge-shaped portion was removed. Under the microscope two pathologists found evidence of early carcinoma at one spot. This was also hard and indurated to the naked eye. Another consultation was held and it was discussed whether the whole breast should not be extirpated. This was declined.	This patient remains quite well. I have no reason to doubt the diagnosis of early cancer.	Over 5 years.
21	60	Married.	Central carcinoma of the left mamma of two years' growth. Small, hard, and puckered. A bloody discharge from the nipple.	April 11th, 1896. The whole mamma, the pectoral, and the axillary glands removed.	Remained well for three years. Died from influenza. No sign of recurrence.	3 years.
22	50	Married.	For two years retraction of the right nipple with hardness and stabbing pain had been noticed. A large central hard carcinoma, the skin being much involved.	Sept. 23rd, 1897. Very extensive operation. Pectoral removed and all axillary lymphatics.	Remained well until April, 1899, when a small nodule of the size of a cherry was removed from the scar. In 1900 the patient was well. In the spring of 1901 she died from "bronchitis." There was no local return according to medical testimony.	Free for 18 months from real return. Free from serious trouble for 4 years.
23	76 (?)	Single.	For three years the patient had had a tumour of left mamma. Operation considered dangerous on account of bronchitis and feeble health. The tumour now of large size, fungating and bleeding, but free of chest wall.	July, 1899. Rapid and extensive operation. The whole mass swept away, the pectoral retracted, and the axillary glands dissected out. A more complete operation not attempted on account of the feeble state of the patient.	July, 1901. Remains well. Marvellous improvement in general health. No local return.	2 years.
24	42	Widow.	For one year a tumour was noticed on the right mamma. Typical hard central carcinoma.	March, 1896. Extensive operation. Pectoral divided.	July, 1901. Well, has lately married again.	Nearly 5 years.
25	44	Twice married; no children.	For nine months a tumour of the right mamma had been noticed. The tumour was of the size of an orange and was moveable. It felt very elastic, as though it were a cyst or circumscribed abscess. No nipple or skin symptoms.	March 29th, 1898. Incision revealed a soft growth which was encapsuled. A very free operation was done, but the pectoral was not divided. There was some difference of opinion as to what the tumour actually was. The majority of observers considered it to be a duct-cancer.	July, 1901. Remains quite well.	3 years and 4 months.

TABLE SHOWING RESULTS OF OPERATION IN CASES OF MALIGNANT DISEASE OF THE BREAST—(*Continued*).

Case.	Years of age.	Married or single.	History and particulars of case.	Date and nature of operation.	Result.	Period of freedom from return.
26	38	Married.	For many months there had been a bloody discharge from the left nipple, and a swelling of the size of an almond existed there. The late Sir James Paget gave his opinion that this was a cyst and should be dissected out.	June 17th, 1896. Finding the mammary tissue round the cyst indurated I removed a liberal portion of it. There were several small cysts, and one contained blood, and there was a small growth on its wall. After a careful microscopical examination definite deposits of carcinoma were found in the indurated tissue. The evidences found were stopping of the ducts with large proliferating cells, and in some spots alveolar structures with large epithelial cells of a typical nature were found.	July, 1901. Remains perfectly well. Compare with Case 20.	5 years.
27	63	Married.	A tumour in the lower part of the left mamma had been noticed for two years. Diagnosis was difficult. The tumour was principally submammary.	Oct. 9th, 1897. At the operation a carcinoma was found which had developed in a deep lobule of the mammary gland and had infiltrated the parietes below the pectoral muscle. There was much difficulty in removing it and free and wide excision could not be effected. The pectoral was removed and the axilla was cleared out.	In September, 1898, a recurrence took place in the scar. A tumour of the size of a cherry was removed, the thorax being nearly opened. The patient died in 1900 with signs of mediastinal tumours.	1 year
28	50	Married.	Pain, swelling, and retraction of the nipple on the right side had been noticed for 12 months. There was a hard, fixed tumour at the inner aspect of the right mamma close to the sternum.	June 21st, 1897. Very free and sweeping operation. Pectoral removed and some diseased glands from the axilla. The growth was close to the sternum and here had infiltrated the internal intercostal muscle.	Remained well until May, 1901, then a nodule formed in the skin over the sternum. This was carcinomatous and the bone beneath was found to be infiltrated with cancer at its centre.	Nearly 4 years.
29	50	Married.	A tumour of the left mamma had been noticed for two years. A bad case, much infiltration of the skin and the axillary glands.	August 18th, 1897. Extensive operation. Both pectorals removed and the glands as high as the clavicle.	In September, 1898, this patient developed a large carcinoma of the liver from which she died. There was no local recurrence.	1 year.
30	50	Married.	For two years a tumour of the left mamma had been noticed. A bad case of infiltrating carcinoma. Deeply depressed nipple and much infection of the skin. The glands extremely involved. Bronchitis and weak action of the heart were present.	Sept. 23rd, 1897. A very extensive operation. Pectorals removed and all axillary lymphatics.	Remained well till May, 1899. Then a small nodule of the size of a pea developed in the skin near the centre of the scar. This was removed under nitrous oxide.	1 year and 8 months.
31	50	Married.	A tumour of the right breast noticed for two years. Occasional bloody discharge from the nipple.	July 27th, 1898. Exploratory incision revealed a carcinoma of the size of a small orange. There was a large hæmorrhagic cyst in the growth. Very free removal. The pectoral was taken away, and all axillary lymphoid tissue.	In July, 1900, this patient was well. She has now gone abroad.	2 years.
32	40	Single.	An Italian surgeon discovered a small tumour in the left mamma and desired to tap it, assuring the patient that it was a cyst. She came to this country and many diverse opinions were expressed. I refused to diagnose the case and strongly urged exploration by incision. The tumour was a deeply-seated elastic swelling of the size of a walnut.	July 18th, 1898. Exploration discovered a soft growth distinctly encapsuled but hæmorrhagic and breaking down. The whole mamma and fasciæ with the axillary lymphatics were removed. The growth was a spindle-celled sarcoma. The microscopical characters were very clear and pronounced.	July, 1901. Is in good health, with no sign of return.	3 years.
33	64	Married.	A tumour had been noticed in the right mamma for 18 months. Ulceration had occurred over the tumour for three months. A large mass of carcinoma. Discharge very offensive.	July 10th, 1898. Ulcer and skin adjacent destroyed freely with cautery. Then the whole mamma, the fasciæ, and the pectoral were removed, with the axillary lymphatics.	September, 1901. In good health.	3 years.
34	42	Married.	In 1898 a tumour was removed from the left mamma. In six months another tumour formed and this also was removed, but it soon returned. On examination the left mamma was extremely cancerous, and it was only too obvious that the tumours removed were carcinomatous and that a proper free excision ought at first to have been performed.	May 3rd, 1899. I removed the disease by a very free operation. The intercostal spaces below the mamma were, however, infiltrated.	An inoperable return of disease in this situation occurred in six months.	6 months.
35	38	Single.	A small tumour in the right mamma had been noticed for months. Diagnosis dubious.	Feb. 28th, 1899. Exploration revealed carcinoma. Free removal.	Remained well in September, 1901.	2 years and 6 months.
36	45	Married.	For 12 months a small lump in the right mamma had been noticed. Unfortunately, opinions given were to the effect that it was nothing and could be left alone. A large carcinoma was found on examination. The symptoms were quite typical.	April 20th, 1899. The pectoral was removed and many diseased glands from the axilla. The carcinoma was of the colloid variety and infiltrated the entire breast.	Remained quite well in September, 1901.	2 years and 6 months.

TABLE SHOWING RESULTS OF OPERATION IN CASES OF MALIGNANT DISEASE OF THE BREAST—(*Continued*).

Case.	Years of age.	Married or single.	History and particulars of case.	Date and nature of operation.	Result.	Period of freedom from return.
37	50	Married.	A well-marked carcinoma of 13 months' duration in the upper quadrant of the left mamma.	Nov. 1st, 1899. Extensive operation. The pectoral and many diseased glands from the axilla were removed. There was suppuration at one part of the wound in this case and it was long in healing.	Remained well in September, 1901.	Nearly 2 years.
38	50	Single.	Large carcinoma of the right mamma had been noticed for four months.	July 30th, 1899. Very free operation. A bad case. The pectoral and the diseased glands as high as the clavicle were removed.	Remained well in September, 1901.	2 years.
39	47	Married.	A tall handsome woman, the mother of a numerous family. Nine months' history of swelling in the right breast. All the signs of carcinoma well marked.	July 27th, 1899. Extensive operation. Bad case. Very widely spread glandular infection. Pectoral removed.	In September, 1901, the patient remained well. Had rheumatic pains in the bones which made me suspicious of the ultimate result.	2 years.
40	44	Single.	The left breast was painful and troublesome for nine months. It was indurated and coarsely lobulated, typical of chronic mastitis. The patient had lost two relatives from "cancer" and was very nervous. I advised removal of the mamma only, as a preventive measure.	June 23rd, 1899. Removed the mamma and the fascia. The axilla was not opened. On careful examination of the specimen by sections afterwards a small indurated area was found at one spot. This was pure carcinoma microscopically. I determined, however, not to interfere further but to await events.	In June, 1901, two small nodules appeared in the scars about its centre. They were well situated for removal. I advised free extirpation and also clearance of the axilla. The patient passed under the hands of another surgeon who operated, but I do not know in what manner.	2 years.

REMARKS.

Case 2.—It is now getting on for five years and this patient is well. The return in the scar was quite insignificant.

Case 4.—This woman was very thin and spare, and I am not sure that the disease would have made much progress if left alone.

Case 5.—The recurrence was slight and the patient had a comfortable existence for about three years. This case illustrates the difficulty of permanent eradication when the axillary glands are extremely infected.

Case 6.—This was a very early case, and the mammary substance seemed hardly at all involved.

Case 7.—This is an instance of a class of case where dissemination of disease has probably taken place prior to operation. The most extensive operating, though preventing local return, seems powerless arrest systematic infection of this nature.

Case 8.—The microscopical characters of this case were those of duct-cancer. They were very remarkable and difficult to interpret, but the cancerous nature of the growth was beyond doubt.

Case 9.—A most extraordinary example of dermatitis maligna. This disease was of the most extreme nature and lymphatic infection had doubtless occurred beyond the reach of operation.

Case 10.—This most interesting case can hardly be explained unless in the light of dormant infection in the cervical gland. The patient was peculiarly thin and spare, and to this I attribute the long quiescence and feeble nature of the malady.

Case 11.—This patient will probably remain well. So far as I have seen these cancers exhibit a lesser grade of malignancy than do their fellows.

Case 12.—This was a case where no surgeon would have operated who was anxious as to his statistics of long freedom from return. Such operations are done only to alleviate local miseries, such as pain and discharge. It is significant that there was no local return in this case.

Case 15.—This is a case of extensive infection of the lymphatics of the skin. Unless the operator is prepared to remove all the integument of the thorax, he can hardly expect to get free of disease in such a case.

Case 17.—This is a most extraordinary case and one of great importance in the clinical history of Paget's disease. That such early and deep contamination occurred was not before present to my mind. This is one of those inexplicable cases which occur and teach us caution in dogmatism.

Case 20.—This is a remarkable and exceptional case, in which the rules of surgery are distinctl violated and yet no eturn occurs. Such have been found before in the experience of surgeons, but such practice is fraught with dangers of speedy recurrence.

Case 22.—This case illustrates well how removal of a slight local return of disease is compatible with the absence of the malady for several subsequent years.

Case 23.—This is a very striking case on account of the age and feebleness of the patient.

Case 25.—This is one of those peculiar tumours which used to be termed "sarcomata." The structure is very complex. It is an instance of encapulisation of certain malignant mammary growths.

Case 26.—This is a most important case as bearing on the value of the microscopical character of early cancer for clinical purposes. The examination was made by two experts. If they are correct the case is very difficult to explain.

Case 27.—This is a typical case of cancer growing in an unfortunate position, and early infiltrating the thoracic parietes.

Case 28.—This was a most unfavourable case, owing to the peripheral position of the cancer, and the long period of freedom is very remarkable.

Case 29.—This is one of those disputed cases in which it is dubious whether the growth on the liver is a cancer *de novo* or an infective growth from the long-neglected mammary disease.

Case 30.—After being last seen the patient remained well for two years. She died in June, 1901, from cardiac failure and bronchitis. No local return.

Case 31.—I have every reason to believe that this patient is still well, or she would have communicated with me.

Case 32.—This case illustrates forcibly the importance of exploratory incision before making an absolute diagnosis in deeply-seated dubious swelling.

Case 33.—The practice of destroying a cancerous ulcer with the cautery before operating is, I think, very important. Infection with the septic discharges of the newly-cut surface is otherwise very likely to occur.

Case 34.—This was a case of mistaken treatment at the commence ment.

Case 39.—This was an extremely bad instance of glandular infection. The freedom from return in this case has impressed me very much.

Case 40.—This case illustrates well the difficulty of distinguishing mastitis from early cancer. It is only after prolonged examination of such specimens after removal that early carcinoma can be detected, and even then errors are often made.

Case 17 illustrates very forcibly a truth which all candid surgeons have to admit, the impossibility of certain prognosis in cancerous disease. Here was a case of exceedingly slight infection of the skin round the nipple.[5] The whole mamma with a wide sweep of skin was freely removed as a precautionary measure only; competent microscopists stated that the breast substance was healthy, yet within two years nodules of carcinoma appeared in the scar. A case more favourably situated for permanent eradication could hardly be conceived, and falsification of diagnosis could hardly be more marked and disappointing. It is interesting to contrast this case with Cases 20 and 26. In each of these cases only a portion of the mamma was removed, and yet no recurrence has taken place over periods of five years. It is most important to observe that in both these cases cysts had formed, and the diagnosis was microscopical, not clinical; I am strongly of opinion that carcinoma associated with cysts is of a less malignant type as regards recurrence than others. Both of these cases are open to the criticism that the changes were inflammatory, not really cancerous. It is extraordinary that on examination of these cases the late Sir James Paget counselled only local removal of the cyst and surrounding tissues. He was against the idea that any cancerous change had occurred. It is right, therefore, to observe that in these most important instances cancerous changes were observed with the aid of the microscope rather in opposition to clinical opinion. But the tissues were examined independently by two of the best microscopists of the day who both were positive of cancerous change. At the same time I am coming more and more to the conclusion, which I fear many of my audience will term retrograde, to depend more and more upon naked-eye appearances and less upon microscopical, and unless a nodule of cancer be found showing the typical appearances on section to the naked eye to be hyper-cautious regarding any positive diagnosis made by the microscope only.

The after-results of cases of operation for mammary cancer would hardly be complete without reference to the movements of the arm and the utility of the limb on the affected side. I must say that the condition of some cases I saw a few years ago where very extensive operations had been done impressed me most unfavourably. The arm was practically tied down to the side by a neuralgic and painful scar, while the hand and forearm were useless and œdematous. I believe this condition is due to two factors—one the too free removal of axillary integument and the other the keeping of the arm bound to the side during the healing process. If the *axillary* integument be so diseased as to need free removal I doubt if the operation be worth doing. In my own cases I have merely retained the forearm in a sling for the first week. Then the nurse, by the insertion of cushions, gradually raises the arm to a right angle with the trunk. The cushions are removed and the arm depressed; they are again inserted and the arm raised. After a fortnight gentle passive movements of the limb can be substituted and gradually increased. I regard this after-treatment of the limb and the movements at the shoulder as being among the most important details in the after-treatment of operations where the axilla is extensively dissected out. I believe the methods I have sketched are less irksome and painful and more efficacious than any form of axillary apparatus or splint yet devised. I wish now to relate a very remarkable case which could hardly be tabulated, and yet has a direct bearing upon the story of mammary cancer.

In December, 1895, I saw a robust man of powerful frame, aged 68 years, who had a rounded, fixed hard tumour of the size of an orange on the thoracic aspect of the left axilla. The tumour had all the clinical characteristics of malignancy. The skin over it was livid and marked with venules. The history was curious. The patient stated that a "lump" had existed there for years which he used to examine and pull about, but only in the last six months had it alarmed him by its pain and increased size. He had been much exposed to the weather in the colonies and his skin was freckled and tanned with many pigmented spots and warts. He had also numerous papillomata scattered about on his skin. One of these had been snipped off the hand, and I thought that the axillary tumours might be of the nature of secondary epithelioma in the glands. However, the tumour was removed. The operation proved to be very difficult, necessitating division of the pectorals. At the upper part there was a quantity of blood-clot, and free bleeding occurred on the removal of this. A strong evidence of malignancy now showed itself. The tumour had invaded the channel of the axillary vein, a piece of which vessel had to be removed between two ligatures. Speedy healing of the external wound occurred without mishap. The tumour was examined by two distinguished pathologists, and they both believed it to be spheroidal-celled carcinoma of a bad type. They also stated their belief that the growth had originated in a supernumerary mammary gland. This seemed very probable, and this is one of the reasons why I have referred to the case. The sequel is full of interest and of encouragement to surgeons. Feeling sure that I had scarcely removed the tumour with pathological certainty, I expected a return, and in two months this apparently took place. And here the importance of care was strikingly illustrated. Reflecting that much muscular tissue was excised the question arose whether the apparent recurrence might not be merely a mass of cicatricial tissue, and, indeed, on watching and waiting this turned out to be the case. For the mass, which formed slowly, reduced, and at the end of six months had quite melted away and disappeared. The patient was on the verge of taking the "Mattei" remedies, and imagine what he and his friends would have said had we rashly pronounced him to be suffering from recurrent cancer. He is now in good health, able to shoot, with free use of the arm. It is upwards of six years since the operation. This is a termination which I could hardly have anticipated and only shows us the excellent results sometimes effected by operation for carcinoma, and how difficult the prognosis of such cases may prove.[7]

It is always customary to dwell upon our successful cases, but to make a paper of this sort useful and reliable our unsuccessful cases must also be alluded to and discussed. In Case 7 spinal growth probably existed before the operation. In Case 15 there was rapid local return in five months. This was entirely due to the skin infection at the time of operation—a most unfavourable condition and one difficult to combat. In Case 34 it was obvious that the preliminary removals before the patient came under my care were of the cancerous tumours only and that extensively infected tissues were left. Thus the intercostal spaces became infiltrated and complete extirpation was impossible. I have already related the two cases of rapid recurrences which have occurred in my 18 recent cases (not tabulated), but these make only five cases in the whole 60 in which the results of the operation may be said to be very poor and quite unsatisfactory, for the instances of local return where small nodules have been excised again and further freedom has been given can hardly be looked upon as altogether unfavourable. What is the explanation of Case 3? Here, after four years' interval of health, the patient died from carcinoma of the ovaries and peritoneum. There was no local return. Again, in Case 29 a large cancer of the liver is developed within one year, but no local trouble is noted. Many surgeons think that these are examples of independent cancerous growth and that it is quite possible for these to occur in elderly women with no breast cancer at all. It is noteworthy that I had to refuse to operate upon two cases because tumours of the liver coexisted. The correct pathological explanation of such cases is very dubious and is open to several interpretations, but their clinical importance is of obvious value and grave errors have arisen when the possibility of visceral tumours has not been fully appreciated.

In conclusion, the following lessons seem to be inculcated from the faithful record of these 60 cases:—1. That the risk of removing cancer of the mammæ by extensive operation is small and should not amount to more than 1 or 2 per cent. Sepsis is preventable, and when it occurs it is a blameworthy error on the part of the surgeon. 2. That early and free removal gives prospect of years of freedom and in a good percentage of cases of good health and enjoyment of life. 3. That the cases which do badly are (1) soft, rapidly growing cancer in young and vascular women, and (2) cases of long continuance before operation where the skin and cervical glands are widely infected. 4. That in certain cases visceral cancers and cancers in the liver coexist with or rapidly follow operation, and the explanation of these is uncertain. 5. That the practice of early exploration by incision of small nodules

[5] This case was seen by the members of the Dermatological Society of London, and they all advised that only the area of affected skin with the nipple needed removal.

[7] See Paul on Carcinoma of Sweat Glands of Axilla. Transactions of the Pathological Society of London, vol. xlvi., 1895, p. 153. Champneys: Transactions of the Royal Medical and Chirurgical Society, vol. lxxviii

and indurations in the breast is of the first importance and should be strongly urged upon the profession generally, especially upon those in general practice who so often see these cases in their early beginnings and upon whom the great responsibility of prompt diagnosis falls. 6. No one should undertake an operation for mammary cancer unless he is capable, and has had sufficient operative experience, to remove thoroughly all lymphoid tissues from the axilla, the leaving of infected glands towards the apices of the axillary spaces being a common source of failure in the results of this operation. 7. The prognosis of mammary cancer is still dubious and sometimes instances arise which falsify ordinary experience. Bad cases have long freedom from return. Early cases show recurrence. But such do not invalidate the rule, Operate early, operate extensively.

ABSTRACT OF

Three Lectures

ON

THE BLOOD-VESSELS OF MAMMALS IN RELATION TO THOSE OF MAN.

Delivered before the Royal College of Surgeons of England on March 3rd, 5th, and 7th, 1902,

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THE arch of the aorta in man, and in all mammals, is a left one, and the two chief points of interest about it are, firstly, its position and, secondly, the arrangement of its branches. Its position is not always opposite the fourth thoracic vertebra, although this is, perhaps, the most usual place throughout the mammalian class; it is rarely a little nearer the head but more often nearer the tail.

In considering the arrangement of the great arteries I have records of over 260 dissections many of which were taken from different specimens of the same animal, and these show that there is a good deal of variation not only in the different orders but in different specimens of the same animal. These different arrangements can only be satisfactorily classified by a series of diagrams covering the whole range of variations. As an example of this the following classification of 107 records of members of the order of Primates may be instanced.

1.	2.	3.	4.	5.
Man, $\frac{11}{12}$.	Man, $\frac{11}{200}$.			
Gorilla, $\frac{6}{7}$.	Gorilla, $\frac{1}{7}$.			
Chimpanzee, $\frac{6}{7}$.	Chimpanzee, $\frac{1}{7}$.			
Orang, $\frac{1}{17}$.	Orang, $\frac{16}{17}$.	Baboon, $\frac{1}{4}$.		
	Gibbon, $\frac{11}{12}$.	Mangabey, $\frac{1}{2}$.	Mangabey, $\frac{1}{2}$.	
Macaque, $\frac{3}{4}$.	Macaque, $\frac{3}{4}$.	Macaque, $\frac{1}{4}$.		
Other cercopitheques, $\frac{1}{4}$.	Other cercopitheques, $\frac{1}{4}$.	Other cercopitheques, $\frac{2}{3}$.		
Capuchin, $\frac{1}{2}$.	Spider monkey, $\frac{1}{2}$.		Spider monkey, $\frac{1}{2}$.	
Howling monkey, $\frac{1}{2}$.	Howling monkey, $\frac{1}{2}$.			
Squirrel monkey, $\frac{1}{2}$.				
Marmoset, $\frac{1}{2}$.				
	Lemur, $\frac{1}{12}$.	Lemur, $\frac{1}{12}$.	Lemur, $\frac{1}{12}$.	Lemur, $\frac{1}{12}$.

The foregoing material has been collected from the compilation by Keith and a paper by Patten, as well as from animals supplied by the Zoological Society. It will be noticed that the normal human arrangement is also normal for the gorilla and chimpanzee and for two varieties of South American monkeys, and this is especially interesting when it is remembered that in many ways these Platyrhini, or New World monkeys, more closely resemble man and the great apes than the monkeys of the Old World do. The second figure shows a frequent abnormality in man (one in 10 according to the English Collective Investigation Committee) and is the normal in the orang, the gibbon, the macaque, and the spider monkey. The third figure shows the normal of the lower monkeys of the Old World and of the lemurs, and only differs from the second in that the left carotid rises higher from the innominate stem. The last two figures are only put in to include occasional variations in different members of the order. The other orders of the mammalia were treated in the same way and I hope to have the opportunity of publishing the details later more fully than can be done here. One or two points may, however, be noticed.

In the Insectivora, Sirenia, Edentata, and Monotremata man's arrangement is the commonest; in the Rodentia the normal is man's commonest abnormality—that is to say, the left carotid rises from the base of the innominate. In the Carnivora and Marsupialia there is a more complete fusion of trunks and the left carotid rises high up from the innominate as the normal, though there is a considerable range of variation. In the Ungulata the fusion of trunks reaches its maximum, and one big branch, often called the anterior aorta, is the normal, though the pig, the hippopotamus, the elephant, and the hyrax have the left subclavian rising as a separate branch. With regard to the elephant my material points to the conclusion that the ordinary figure of the text-books is probably founded on an abnormality; this figure shows a symmetrical arrangement of trunks, the two carotids coming off from a common trunk in the middle and the two subclavians rising one on each side. Out of nine records of dissections, two of which were kindly made for me by Professor Paterson, I could only find two with this arrangement. In the other seven the left carotid rose from the root of the innominate, which was very short. One more symmetrical arrangement is found in mammals, and that is the presence of two innominate trunks; this, I believe, is the normal for whales and bats, and is usually said to be so for Insectivora also, though Dobson's writings and my own observation make me think that the human plan is commoner.

With regard to the reasons for these various arrangements it is probable that the breadth, depth, and length of the thorax, the size and shape of the anterior thoracic outlet, and the distance of the arch of the aorta from the outlet all play a part. In the whales and bats, for instance, the thorax is broad, shallow, and short, and in both double innominates are found; while in the ruminants the thorax is long and narrow and the trunks are all fused into a single vessel. It is probable that in the whole mammalian class the arrangement of the great vessels most frequently met with is that in which the left carotid rises near the root of the innominate; so that this, which is the commonest abnormality in man, may be perhaps regarded as an atavistic variation in him. The other common abnormalities of the human aortic arch, the origin of a vertebral from the aorta, and the dorsal position of the right subclavian are, I believe, very rare in the lower mammals; at least, I have met with no examples of them in over 260 records.

I next described the carotid arteries and, among other things, pointed out that the superior thyroid is more often than not a branch of the common, instead of the external, carotid as in man; that the facial artery shows a series of transitions from a trunk confined to the submental region to one running up to the eye as in man. This fact suggested the possibility that the artery may have come up from the hyoid region with the muscles of expression. In animals in which the head is bent, such as all the Primates and the squirrel, the external carotid is thrown into a constant **S** figure and the two convexities of the **S** give off respectively the lingual and posterior auricular arteries which are both very constant. This curvature is less well marked in animals with stretched-out heads and necks, such as the dog, and in man too the curve is not very evident, but clearly not for the same reason; in him its disappearance is

probably due to the shortening and pressing back of the face.

The greater importance of the internal maxillary in the lower mammals is interesting; in them it not only supplies the orbit and eye, but helps largely in the formation of the circle of Willis. This internal maxillary is the direct continuation of the external carotid and both jaws are built up round branches of it, the maxilla round the infra-orbital and superior dentals, and the mandible round the inferior dental. After noticing the varying development of the internal carotid and the formation of the circle of Willis I pointed out that the anterior communicating artery was not found in the lower mammals since the anterior cerebral was a single trunk for a long distance after leaving the circle.

After discussing the subclavian artery and its branches I ventured to construct what I regarded as a "generalised mammalian subclavian." In this the vertebral was the first branch, but the superior intercostal rose from the root of it, the thyroid axis and internal mammary came off opposite one another and had definite and constant relations to the phrenic nerve, while more externally still the posterior scapular was placed—a position which it often occupies in man. This arrangement of branches was not intended to apply to any one individual animal but to represent the average of all the specimens I have dissected.

The vertebral artery seems always to the present, but it does not necessarily join its fellow to form a basilar as in man; in the horse and dog, for instance, the basilar is formed by the occipital, while the vertebral expends itself in giving branches to the spinal canal, some of the blood from which reaches the circle of Willis by the anterior spinal artery. The thyroid axis was never once seen to give off an inferior thyroid branch, although this may occasionally rise from the lower part of the common carotid in monkeys. The branches from the so-called axis are therefore superficial cervical, ascending cervical, and sometime suprascapular.

The branches of the axillary artery in man are more numerous and scattered than they are lower down in the scale, and when it is remembered how often branches which should be separate rise by a common trunk, one is not surprised to find that this fusion is the rule in other mammals. The division of the branches forms various combinations in different animals, but taking them altogether I am inclined to agree with Eichholz to a certain extent and to think that there is a tendency for the vessels to group themselves into two main branches, the first of which is ventral and the second dorsal. The ventral branch may be called the acromio-thoracic or thoracic axis and includes this artery of man as well as the superior, alar, and long thoracics; it has the inner head of the median nerve passing dorsal to it. The dorsal branch most often consists of the subscapular and dorsalis scapulæ, the two circumflexes, and the superior profunda. Unfortunately for exact attempts at dorsal and ventral delimitations, the subscapular artery very often comes from the ventral branch, while the anterior circumflex cannot be looked on as dorsal in distribution.

The brachial artery is chiefly interesting for its relations to the supra-condylar foramen. It is a mistake to think that when this is present the artery always passes through it, though it is true that it usually does so; the median nerve, however, always passes through the foramen, but the artery sometimes passes superficially. The high radial so often seen in man is represented in the Capuchin monkey and one kind of marmoset; in these, both New World forms, the radial rises from the thoracic axis of the axillary.

In the forearm we have in man traces of three different blood-paths to the hand; the oldest is the anterior interosseous, and in a dissection of a lizard it was shown that the blood passed from the flexor side of the elbow, between the radius and ulna, to the dorsal side of the wrist, and then, by perforating branches, passing between the metacarpal bones, to the palmar surface of the hand. That this vessel is really the anterior and not the posterior interosseous of man is evidenced by the fact that it keeps close to the interosseous membrane and does not lie between the two layers of extensor muscles. The arrangement in the lizard (a generalised reptile) also explains why man's anterior interosseous artery pierces the interosseous membrane. When the mammals are reached it is found more convenient to send the blood to the hand by an artery running down the middle of the flexor surface of the forearm accompanying the median nerve; this is the median artery, which occurs as an occasional abnormality in man and is always there in a vestigial condition as the comes nervi mediani. The ulnar artery is always present in mammals with well-developed fore-limbs, but until the Primates are reached it is only a muscular branch. In the Primates, however, beginning with the lemur, it takes over the work hitherto performed by the median and supplies the palm of the hand. The radial artery is formed by the fusion of two or more separate branches. In a generalised mammal, such as the squirrel, there are superior and inferior radials, the former rising from the brachial above the elbow and supplying the muscles of the radial side of the fore-arm; the latter, rising from the median in the lower third of the fore-arm and winding round the outer side of the wrist to the dorsum, becomes connected with the perforating and dorsal interosseous branches which used to be the continuation of the anterior interosseous when that artery was the main supply of the limb. The human radial is probably formed by the fusion of these two arteries, and the superficialis volæ is quite a late development, though in many of the primates it is a very important one. The passage of the radial between the first two metacarpal bones is merely an enlarged perforating branch, and in many mammals it is the second perforating, that between the second and third metacarpals, which is enlarged.

After discussing the thoracic and abdominal aortæ and their varying relations to the great veins I pointed out that in man the bifurcation of the aorta, if it does not occur at the lower margin of the fourth lumbar, is more likely to be lower than higher, and that this agrees with the mammalian tendency. In many monkeys the cœliac axis comes off as a common trunk with the anterior mesenteric, but this is a rare abnormality in man and is seldom met with in other mammals. The three branches of the axis are very constant throughout the mammalian class but extra hepatics are sometimes met with. In man the right kidney is more caudal in position than the left, though the arteries are usually opposite one another. In almost all other mammals the left is nearer the tail, and sometimes, as in the sheep and the phalanger, there is an enormous interval between them. This more caudal position of the left kidney and renal artery is sometimes reverted to in man in spite of the great development of the right side of the liver. Extra-renal arteries are sometimes found in man. These I only saw in two other mammals, the hedgehog and the guinea-pig, in which they appear to be normal. The spermatic or ovarian arteries always rise between the renals and the posterior mesenteric arteries. In many animals they come from the renals, in others from the aorta by a common trunk; both these are recognised human abnormalities. The posterior mesenteric is always absent in marsupials and may be wanting in members of other orders. The lumbar arteries are usually six in number, and in the Diana monkey, the lemur, and the grey seal one trunk serves for the origin of the two vessels of opposite sides. The middle sacral or caudal artery always rises above the bifurcation, as in man; after running down for some distance it gives off a branch on each side, and the three arteries run along the tail in the spaces inclosed by the chevron bones. In the Capuchin monkey, in which the tail is prehensile, extra branching occurs, so that there are seven arteries inclosed by the chevron bones; the most lateral of these supply the anterior segments of the tail, the median one reserving itself for the tip. This is an approach towards the rete mirabile found in the ornithorhynchus and some Edentates.

The aorta always divides into common iliacs in the Primates and Rodentia, and very often does so in the Chiroptera, the Insectivora, and the Edentata, and occasionally in other mammals. In other orders it is usual for the two internal iliacs to come off lower than the externals from a common stem which continues the abdominal aorta backward for a variable distance. It is probable that this last arrangement is the more primitive, since it is found in most reptiles. There is a certain resemblance between the presence of common iliac arteries and the origin of the great trunks from the arch of the aorta. In those cases in which the trunks are fused—e.g., the carnivora and the ungulata—there is no common iliac, while in the Primates, in the Rodentia, and in many Edentata, in which the branches of the arch are separate, common iliacs are often found. The seal differs from most Carnivora in having an aortic arch like man's, and it is also remarkable for having common iliac arteries. The resemblance does not bear pushing too far, but it is striking enough to suggest that

breadth of body must be the chief cause of separation of the branches of the aorta and of the presence of common iliac arteries.

The obturator artery is very often a branch of the internal circumflex in monkeys, and this usually comes from the internal iliac in these animals; lower down in the scale the obturator is often wanting, but in the monotremes it forms a rete. The internal pudic artery often rises from the sciatic trunk outside the pelvis; it is wanting in the hedgehog and the lemur, but in these specimens, both of which were females, the dorsalis clitoridis came from the vaginal and represented the occasional accessory pudic of man. It seems probable that the internal pudic was originally an extra-pelvic branch of the sciatic to the cloacal region.

The sciatic is the original main blood-path of the hind-limb. In the lizard the positions of the brachial and sciatic are quite similar, both of them running along the post-axial surface of the limb. In mammals, where the thighs become adducted and internally rotated the blood makes a new and shorter channel on the inner side of the thigh from the external iliac and deep epigastric which are present in the reptile. In man this main sciatic trunk is occasionally reverted to, but I have never seen it in any other mammal. Probably the position of man's thighs would render the reappearance of this artery easier than it would be in other mammals.

With regard to the branches of the external iliac, the deep epigastric is constant in position, and in the Capuchin monkey (two specimens) it gave off the obturator artery, so that this important human abnormality is probably atavistic. The deep circumflex iliac, on the other hand, has in man shifted its origin from much higher up; in the Carnivora, for instance, it rises from the hinder part of the aorta.

The femoral artery forms a rete mirabile in the sloths and ornithorhynchus; its division into superficial and deep is not very satisfactory below the Primates. Among its branches the superficial epigastric is the artery of the inguinal and posterior abdominal mammary glands. The internal circumflex is nearer the pelvis and larger than in man; it often in Old World monkeys rises from the internal circumflex in the pelvis and supplies the same area as in man as well as the hamstrings; its origin is always higher than that of the external circumflex. The internal saphenous artery carries the blood to the foot in almost all mammals until man is reached and then it is only represented by the anastomotica magna. In its full development it accompanies the internal saphenous vein and nerve along the posterior margin of the tibia to about the middle, where it divides into two, one for the dorsum of the foot, the other for the sole. The dorsal branch behaves just as the dorsal artery of the hand does, dividing into dorsal, interosseous, and perforating branches, from the latter of which the deep plantar arch is formed in man. This dorsal branch clearly corresponds to the radial in the fore-limb, running as it does along the pre-axial border of the limb to the dorsum. The plantar branch divides into digital branches for the toes and lies between the long flexor tendons and the flexor brevis digitorum; its serial homologue in the forelimb is probably the superficialis volæ. Very often the dorsal branch of the saphena is absent and then the dorsum of the foot is supplied by the anterior tibial which is probably an older blood-path, as it is found in the lizard closely corresponding with the vascular arrangement of the anterior interosseous in the fore-arm. When the dorsal branch of the saphena is well developed it carries the blood to the dorsum and the anterior tibial becomes a mere muscular branch to the extensor muscles, its anterior tibial recurrent branch probably corresponding to the posterior interosseous and posterior interosseous recurrent of the forearm. In man the straightening of the knee has caused the blood to revert to its ancestral path to the dorsum through the anterior tibial. Another marked change which comes over the anterior tibial artery is its relation to the popliteus. In all mammals until the Primates are reached the artery invariably passes in front of the popliteus, but in the lemur the popliteal artery runs behind the muscle and the anterior tibial passes through the membrane beneath the lower border of it, and this arrangement continues until man is reached. The former, more generalised, mammalian arrangement is sometimes found as a human abnormality (twice in 106 cases in the report of the English Collective Investigation Committee).

The posterior tibial artery is a muscular branch running down between the two layers of flexor muscles and clearly corresponding with the median in the forearm. In man, when the saphenous artery disappears, the posterior tibial carries the blood to the sole.

The peroneal artery is not well marked until man is reached; its position on the post-axial side of the flexor surface of the leg suggests that it is possibly homologous with the ulnar in the forearm.

It is interesting to note that although the two limbs start with an identical arrangement of vessels in the lizard, they are modified in a different order in the mammalia; the fore-limb first adopts a median ventral vessel, the median, to carry the blood to the hand, while the hind-limb sends its blood through a pre-axial vessel—the saphenous. Later, in man, with the assumption of the erect position, the systems are reversed and in the leg the median ventral vessel (posterior tibial) carries the blood to the sole, while in the fore-arm this vessel is done away with and two lateral vessels, the radial and the ulnar, are used. At the same time in the leg the old anterior tibial blood-path of the lizard is reopened on the extensor side of the leg. These changes point to the ready adaptability of arteries to change of environment.

A CONTRIBUTION TO THE STUDY OF INTESTINAL SAND,

WITH NOTES ON A CASE IN WHICH IT WAS PASSED.[1]

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THE occurrence of intestinal sand has attracted the attention of observers for some years past. Cases presenting this symptom appear to have been of singular infrequency in the British Isles, for it is scarcely possible that they can have been often overlooked. English literature on the subject is, however, almost a blank, and the best text-books in this country and in the United States of America make but little reference to it. A good many cases have been noted and reported on the continent of Europe. The object of this communication is to attempt to place these examples of intestinal sand in their proper nosological position and to record a case of true, as distinguished from false, enteric lithiasis which came under our observation in this country. The particulars of it are as follows.

A married lady, aged 33 years, residing in the provinces, and leading a healthy life, began to suffer from diarrhœa early in 1900 and came under the care of Dr. E. Surridge. No cause for this ailment was made out. The previous health had always been fairly good. The last confinement had occurred three years before. The house which was occupied by this lady was built on a sandy soil and its drainage was reported to be in excellent condition and of recent arrangement. The water-supply was not good, being hard, and containing some organic impurities. The family history was as follows. Both parents were living. The father was a gouty man and a brother and sister of his were gouty. There were five sisters and two brothers; one of the latter suffered from colic. Bowel disorders were said to be prevalent in the family. The youngest sister of the patient, 20 years her junior, suffered badly at one time from a widespread eczema. When this disorder was subdued she suffered from asthma, the two conditions alternating. After local treatment and internal medication with arsenic she recovered her health. The patient had two daughters, aged respectively seven and three years, both of whom were in good health. After the last confinement the patient suffered occasionally from eczema around the anus for about 18 months. When this condition yielded to local and general treatment she became subject to looseness of the bowels, having previously been of

[1] A paper read before the Royal Medical and Chirurgical Society.

a constipated habit. Her weight in the summer of 1899 was 9 stones 2 pounds. The present ailment began in January, 1900, with a very intractable diarrhœa, accompanied with internal rumbling and purring noises, there being six or eight loose motions in each 24 hours. In the middle of February the patient took to her bed and was ordered an exclusively milk diet with lime-water. This treatment lessened the diarrhœa to three or four motions each day, sometimes attended with the passage of mucus. On March 8th she was seen in consultation with Dr. Harris of Manchester. 10 days later sand was discovered in the motions and found subsequently in all in which it was looked for.

On March 23rd, in Dr. Harris's absence, Dr. J. Dreschfeld's opinion was taken on the case. No ordinary methods of treatment had any effect in checking the diarrhœa and the formation of intestinal sand. The patient was sent up to London in April, and in Sir Dyce Duckworth's absence from town came under the care of Dr. A. E. Garrod. At this time two or three motions were passed each day. They were loose, brown in colour, and on tilting the bed-pan the gritty sand could be seen at the bottom of the vessel, each motion containing about a teaspoonful of it. Early in May Sir Dyce Duckworth saw the patient with Dr. Garrod. She was pallid and sparsely nourished. The thoracic organs were healthy. On examining the abdomen it was found that the colon and its sigmoid flexure were, though empty, too readily palpable, and apparently thickened in their walls. The right kidney was moveable. There was a slight degree of pyrexia at this period, the temperature rising occasionally to 100° F. or a little above this. Specimens of the sand were obtained and submitted to examination. Full details of this are furnished in Dr. Garrod's report herewith. It will suffice to say here that it much resembled at first sight a deposit of uric acid, being of reddish-brown colour and finely gritty. It was insoluble in cold and boiling liquor potassæ and readily soluble in boiling nitric acid. Under a low power of the microscope particles of various shapes and sizes were seen, of a brilliant reddish-brown hue, and translucent.

The patient was confined to bed and kept on milk diet. For medicine salicylate of bismuth and bicarbonate of sodium were given in mixture. Under this treatment the diarrhœa was somewhat checked and the general health improved. The motions were rather more consistent, stained by the bismuth, but still contained sand. Towards the end of May the patient sat up for some time daily and went out for short walks, but there was now complaint for the first time of pain in the large bowel. Chicken broth, turtle soup, mutton broth, and koumiss were now given, and a mixture containing carbonate of bismuth, opium, and tincture of cinnamon. There were gradual improvement in most respects and less pain, but a good deal of rumbling noise in the bowels. The patient returned home early in June and continued the treatment under Dr. Surridge's care. Some benefit was gained by taking bael jelly and also from a mixture containing some aromatic sulphuric acid, tincture of cinnamon, and opium. In July, by our advice, she went to Plombières under the care of Dr. Bottentuit. She took baths and had rectal douches and drank the water in small quantities. All vegetable food was withheld, and digestion was found to be much more comfortable without it, as it caused immediate distension. She lost 10 pounds in weight while at Plombières. The next month was spent in Folkestone with some benefit and some weight was regained. On her return home she reported herself very much better. Her general health and her nervous tone had improved. There were still diarrhœa, with much flatulence at intervals, and some, though less, sand, accompanied with a great deal of mucus. Dr. Bottentuit prescribed bicarbonate of sodium in teaspoonful doses with advantage for the flatulent attacks. The appetite was better and more variety of food could be borne. During October there were alternations of constipation and diarrhœa, and a considerable quantity of sand was passed on Oct. 12th. She was next seen in November. She was rather pallid and languid, was easily tired on exertion, but had regained her usual weight, 9 stone 2 pounds. The large bowel no longer appeared thickened, as it did six months previously, but there was tenderness on pressure about the splenic flexure of it. There was still a looseness of the bowel, from two to four actions occurring daily, but no sand was passed. Her diet was altogether of animal food, and a little whisky was taken with one meal. The urine was turbid with lithates and deposited uric acid. The tongue was large, flabby, and thinly grooved. A mixture with liquid extracts of cinchona and bael and tincture of cinnamon was ordered, and milk with natural seltzer water was added to her diet. The catamenia were regular. She returned home about the middle of the month.

This case presented most of the characters that have been described in the few instances of the disorder that are already on record. It was, however, remarkable for the little pain which was experienced. In most examples of enteric lithiasis this appears to be a marked feature, occurring in paroxysms lasting several hours, somewhat akin to those associated with biliary and renal colic and attended with much flatulent distension and vomiting. According to M. Dieulafoy, who has recorded a series of these cases, there is commonly a family history of gout, and he regards the condition as one of the irregular manifestations of this disorder in many, but not in all, instances. In this case there was a distinct gouty history on the father's side. In a large proportion of the recorded cases there has been noted the co-existence of muco-colitis, often attended with the passage of mucous casts and sheds. Diarrhœa occurs in some cases, and constipation in others. The subjects of the disorder in two-thirds of the cases have been women, and the average age is about 35 years. Examples of it have been recorded in children under four years of age. Some of the cases described by continental observers, as will appear from Dr. Garrod's inquiries, are not truly cases of enteric lithiasis such as here described, the so-called sand having been proved to consist of vegetable débris and not of inorganic matter.

Characters and composition of the intestinal sand.—When washed and dried in the air the gritty material passed with the motions had the appearance of a fine sand. Its ground colour was a deep brown with an admixture of pale or almost colourless particles. Under a low power of the microscope the individual granules were seen to have a great variety of shapes; some were roughly oval, some oblong or even rod-like, and others, again, were of very irregular outline. Their colour varied from yellow to a warm brown. Some were translucent and others opaque, with the exception of their edges. Some had a finely granular appearance, but none of them showed any indication of crystalline structure. Their longest measurement varied between 0·05 and 0·2 millimetres. When treated with an acid beneath a cover-glass the particles became surrounded by groups of bubbles and the solution of the inorganic constituents left exposed an organic basis, brown in colour, wholly structureless, and soluble in alkalies. No cellular elements could be seen and the organic basis certainly did not consist of vegetable débris of any kind. As in Eichhorst's case, the organic material, when washed with distilled water and stained with methylene blue, was seen to be rich in bacteria, both bacilli and micrococci being present in large numbers. When, on the other hand, the organic material was got rid of by combustion, the particles of inorganic substance left appeared like decolorised shadows of the original granules, which they resembled both in shape and size. The air-dried sand lost considerably in weight at 100° C., owing to the expulsion of water from the organic basis, and the percentages of water and of organic and inorganic materials contained in it were found to be as follows:—

Water	12·40
Organic material	26·29
Inorganic material	61·31
	100·00

The inorganic residue left after combustion over a Bunsen's burner had a bluish-white tint and contained only a few dark particles. With the exception of such particles it was completely soluble in hydrochloric acid. This residue was submitted to analysis and was found to have the following composition:—

Calcium oxide (CaO)	54·98
Phosphorus pentoxide (P_2O_5)	42·35
Carbon dioxide (CO_2)	2·20
Residue, containing traces of magnesium and iron	0·47
	100·00

The presence of magnesium was beyond doubt, but the quantity was extremely small. Calcium phosphate was clearly the chief mineral constituent. The pigmentation of the sand proved to be somewhat complex and the small

remainder of the material available did not permit of a complete and satisfactory investigation from this point of view. When some of the material was treated with acetic acid a scanty evolution of carbon dioxide was observed, and the gas rose to the surface in a stream of minute bubbles. The solution had the colour of brown sherry, and when filtered from the organic débris and shaken with ether it imparted to the ether a delicate pink tint, whereas the subjacent liquid remained of a rich yellow colour. The extraction was repeated several times, and the collected ethereal extracts were next shaken with a small quantity of distilled water, whereupon the pigment left the ether and imparted to the water a rich pink tint, which recalled that of a solution of acid hæmatoporphyrin. When examined with the spectroscope this solution showed a broad absorption-band in the neighbourhood of the D line, which lay between λ6120 and λ5370. With hydrochloric acid solutions of the pigment the band appeared composite, consisting of two darker bands united by a dark shading, and the position of the component parts was approximately as follows :—

First dark band	λ6120–λ5890
Dark shading.	
Second dark band	λ5760–λ5460

A second band in the neighbourhood of the F line (λ5060–λ4860) corresponded in position with that shown by a dilute acid solution of urobilin, and was apparently due to a scanty admixture of that pigment. When kept for a day or two, even in the dark, the pink solution became almost decolourised and the urobilin band alone remained visible. The pink pigment was also promptly decolourised by alkalies. The very unstable pink colouring matter here present did not agree in its properties with any pigment, fæcal or other, with which we are acquainted. The yellow liquid from which the pink pigment had been extracted with ether showed the band of acid urobilin with great intensity, and urobilin was apparently the chief colouring matter of the sand. It had all the ordinary properties of urobilin, as obtained from urine or fæces ; was precipitated by saturation of a watery solution with ammonium sulphate ; yielded a green fluorescence with zinc chloride and ammonia, and showed the characteristic E-band spectrum when partially precipitated from a concentrated alkaline solution by the cautious addition of an acid. The organic residue upon the filter-paper acquired a green tint on exposure to air, and when treated with a solution of sodium hydrate yielded a pale greenish-yellow solution, which did not become more distinctly green on standing but which gave Gmelin's reaction. Hence it was evident that among the colouring matters present was a small quantity of unaltered bile-pigment. Berlioz mentions the presence of urobilin in one of Dieulafoy's specimens, and Eichhorst observed the presence of biliverdin in some granules of the sand which he examined ; but the only recorded case in which a special investigation of the contained pigments has been carried out is that of Dr. R. S. Thomson and Dr. A. R. Ferguson, who found, in addition to some urobilin, a pigment soluble in dilute hydrochloric acid and in alkalies but insoluble in water, alcohol, ether, and chloroform, and which was obviously not one of the recognised colouring matters of the bile.

We are greatly indebted to Dr. Thomson and Dr. Ferguson for the opportunity of examining a small quantity of the sand in question, which in appearance chiefly differs from ours in the larger size of the component granules. From a solution in acetic acid there was not extracted by shaking with ether any of the unstable pink pigment above described, and judging by the intensity of the absorption-band the amount of urobilin present appeared to be considerably less than in our specimens.

VARIETIES OF INTESTINAL SAND.

Although the literature of intestinal sand is so scanty two distinct classes of materials have clearly been described by this name. These require to be clearly distinguished from each other and they may conveniently be described as *true* and *false* sand respectively.

1. *False* intestinal sand is composed of remains of vegetable foods which have resisted the action of the digestive fluids and which may or may not have acquired some incrustation of earthy salts. One particular kind of vegetable débris is especially apt to appear as a sand-like material in the motions—namely, the sclerenchymatous particles which are so abundantly present in the flesh of pears, and especially in that of certain varieties. The occurrence of such sand in the motions was described by C. Robin in 1873, and some at least of the specimens described by Laboulbène in the same year were obviously of this nature. Eichhorst described a case in 1889, and Fürbringer called special attention to this material as simulating biliary concretions. Naunyn also refers to it as one of the varieties of so-called "biliary sand."[2] In this country specimens of this kind have been brought before the notice of the Pathological Society of London by Dr. S Delépine and Mr. S. G. Shattock. A specimen of pear sand in our possession, for which we are indebted to the kindness of Dr. J. H. Drysdale, is paler in colour and more coarsely granular (from 0·3 to 0·6 millimetres) than that passed by our patient and when burnt leaves only 1·76 per cent. of inorganic residue. Other observers have obtained from 2 to 3 per cent. of such residue—figures which contrast sharply with the much higher percentage of mineral constituents in specimens of true intestinal sand. The microscopic appearance of the *pear* sand is very characteristic. When examined under a low power the granules appear as if studded with projecting crystals, and after removal of any inorganic incrustation by an acid they are seen to be composed of woody cells, the thick, transparent walls of which are traversed by channels running from the narrow cell cavities towards the surface. In a word, the granules are easily recognised as identical with the particles of sclerenchymatous tissue in the fruit from which they are derived, and of which the patient will be found to have partaken freely. There is reason to believe that these woody particles may remain for some time in the intestine, and the expulsion of large accumulations of them may be preceded by severe colicky pain. The presence of a black sand-like material in the motions, consisting of cells derived from the banana, has also been described by some American authors. The dark colour is apparently acquired during the passage of the cells along the alimentary canal.

2. *True* intestinal sand, on the other hand, of which the material passed by our patient offers an example, has no such vegetable basis, and, wanting such a rigid skeleton, it owes its hardness and grittiness to the much larger proportion of inorganic material which it contains. The organic basis of such sand is clearly of animal origin. Some of the published analyses of such materials show a very close resemblance to that of our specimen. Thus Mathieu and Richaud analysed the sand passed by their two patients with the following results :—

	Case I.	Case II.
Organic material	30·800	45·80
Tricalcic phosphate	64·206	46·68
Calcic carbonate	3·418	5·14
Various mineral substances	1·576	2·38
	100·000	100·00

Dr. Thomson and Dr. Ferguson's specimen had the following composition :—

Organic matter	28·5
Inorganic matter	71·5
	100·0
In the organic residue :	
Calcic carbonate	11·7
Tricalcic phosphate	87·3
Insoluble residue (silica)	1·0
	100·0

Berlioz analysed one of Dieulafoy's specimens and obtained the following figures :—

Water	11·25
Nitrogenous organic material of fæcal origin	22·24
Fatty substances	Traces
Phosphoric acid	17·56
Lime	26·22
Magnesia	14·05
Silica	8·68
	100·00

[2] Since this communication was made we have found a description of the pear sand by Dr. Alexander Marcet, in his "Essay on Calculous Disorders" (p. 132), published in 1817. The description was based upon specimens the true nature of which had been recognised by Wollaston.

In some other cases the proportion of inorganic material has been considerably less. Thus Marquez found :—

Organic matter, of animal origin	72
Inorganic, consisting of calcium phosphate and traces of carbonate	28
	100

In a case recorded by Biaggi the sand was agglutinated into balls, from 6 to 8 centimetres in diameter, which readily disintegrated into sand. Much calcium phosphate was present, with traces of magnesium and sodium. The material passed in Mongour's case was *gravel* rather than *sand*, and it occupies an intermediate place between intestinal sand and the large intestinal calculi which are sometimes met with, and which are usually composed, in large part, of ammonium magnesium phosphate. Most of the particles were of about the size of an orange pip, but some attained to the dimensions of nuts. The analysis was as follows :—

Organic material (by difference), water, iron	29·28
Magnesium phosphate	26·82
Calcium carbonate	43·90
	100·00

Seat of formation of "true" intestinal sand.—The question remains to be considered how and where sand of this description is formed. Its composition excludes a biliary origin, for it contains no cholesterin, and bile pigment is only present in traces. On the other hand, there is much that points to its origin in the intestinal tract. Such sand is practically always met with in association with intestinal disorders and usually with muco-membranous colitis. The characters of the organic basis and the large numbers of bacteria which are included in it point to the intestine as the most likely seat of origin. When our patient was taking bismuth salicylates the sand passed had a uniform grey tint, but this may have been due to the deposition of a mere surface coating of bismuth sulphide. The richness of the material in urobilin and its poverty in unaltered bile-pigment affords a more satisfactory indication, and suggests that it is formed in a region in which the conversion of the bile-pigment into urobilin is already far advanced. There is good reason to believe that the principal seat of this change is in the upper regions of the colon. Concretions, chiefly composed of calcium phosphate and carbonate, can hardly be formed in any but alkaline surroundings; but there is so much doubt as to the reaction of the contents of different parts of the intestinal tract, and especially under morbid conditions, that this does not afford any very clear indication of the exact locality in which the sand is formed. The nature of the inorganic constituents is fully compatible with an intestinal origin. Nor is it necessary to look to unabsorbed residues of the calcium of the food as the sole source of supply, for Voit, Friedrich Müller, and von Limberg have shown that a large part of the calcium excretion of the body is effected by the intestine, and Kobert and Koch found calcium, magnesium, and phosphoric acid in the material which accumulated in the empty and cleansed colon of a patient with a fæcal fistula. Like Dr. Thomson and Dr. Ferguson's patient, ours had taken milk and lime-water freely, and, as Bunge has shown, the amount of lime contained in milk is actually greater than that present in an equal volume of lime-water, so that the former may be regarded as a more important source of calcium supply than the latter.

The above considerations leave little room for doubt that true intestinal sand has its origin in the intestinal canal, for chemical and clinical evidence alike point in this direction. The nature of the contained pigments suggests the colon as the most likely seat of formation and the anatomical structure of the large bowel may be looked upon as more favourable than that of the small intestine to the sojourn required for the deposition of the earthy salts of which the material is so largely composed.

Bibliography.—K. L. Bates: Intestinal Concretions resembling Sand, and originating in Cells from the Banana, American Journal of Medical Science, 1887, vol. xliii., p. 441. Biaggi: Du Sable Intestinal, Presse Méticale Belge, 1874, tome xxvi., p. 153. S. Delépine: Sable Intestinal and some other Intestinal Concretions, Transactions of the Pathological Society of London, 1890, vol. xli., p. 111. G. Dieulafoy: Lithiase Intestinale et Entéro-colite Sableuse, Clinique Médicale de l'Hôtel Dieu, Paris, 1896-97, p. 213. G. Dieulafoy: La Lithiase Intestinale et la Gravelle de l'Intestin, Bulletin de l'Académie de Médecine, Paris, 1897. Edes: Appearance of altered Banana in the Dejections, Boston Medical and Surgical Journal, 1883, vol. cviii., p. 446. Eichhorst: Lehrbuch der Physikalischen Untersuchungs-Methoden, 1889, 3. Auflage, p. 240. Specielle Pathologie und Therapie, 1895, 5. Auflage, Band ii., p. 414. Ueber Darmgries, Deutsches Archiv für Klinische Medicin, 1900, Band lxviii., p. 1. P. Fürbringer: Zur Kenntniss der Pseudogallensteine, Verhandlungen des Congresses für innere Medicin, 1892, Band xi., p. 313. E. C. Jones: A Case of Muco-membranous Colitis, with Intestinal Sand, Medical News, 1897, vol. lxx., p. 120. Laboulbène: Sur le Sable Intestinal, Archives Générales de Médecine, 1873, 6e série, tome xxii., p. 641. Bulletin de l'Academie de Médecine, Paris, 1893, 2e série, tome ii., p. 1383. Nouveaux Éléments de l'Anatomie Pathologique, 1879, p. 231. M. de Langenhagen: L'Entéro-colite Muco-membraneuse, Semaine Méticale, 1898, tome xviii., p. 4. Marquez: Note sur le Sable Intestinal, Comptes Rendus de l'Association Française pour l'Avancement des Sciences, 1879, p. 878. A. Mathieu et A. Richaud: Deux Cas de Sable Intestinal et d'Entérite Muco-membraneuse, Bulletin et Mémoire de la Société Médicale des Hôpitaux, Paris, 1896, 3e série, tome xiii., p. 473. A. Mathieu: Sable Intestinal en dehors de l'Entérite Muco-membraneuse, Bulletin et Mémoire de la Société Médicale des Hôpitaux, Paris, 1897, 3e série, tome xiv., p. 513. A. Mazeran: Calculs de l'Intestin et Gravelle Intestinale, Thèse de Lyon, 1899, p. 53. A. Mazeran: La Gravelle Intestinale, Revue Internationale de Médecine et de Chirurgie, Sept. 25th, 1899. Mongour: Note sur un Cas de Lithiase Intestinale, Comptes Rendus de la Société de Biologie, Paris, 1896, p. 203. Naunyn: Klinik des Cholelithiasis, 1892, p. 79. Oddo: Sable Intestinal, Bulletin et Mémoire de la Société Médicale des Hôpitaux, Paris, 1896, 3e série, tome xiii., p. 539. C. Robin: Dictionnaire de Nysten, 1873. 13e édition, p. 1226. Shattock: Sable Intestinal, Transactions of the Pathological Society of London, 1897, vol. xlviii., p. 124. D. Thomas: Australasian Medical Gazette, 1891-92, vol. xi., p. 56. R. S. Thomson: Glasgow Medical Journal, 1898, vol. xlix., p. 202. Thomson and Ferguson: An Analysis of Sandy Matter (Sable Intestinal) from the Human Intestine, with Special Reference to a Contained Pigment of Unusual Character, Journal of Pathology and Bacteriology, 1900, vol. vi., p. 334.

SOME EXPERIMENTS TO DETERMINE THE ACTUAL EFFICACY OF IZAL OIL AS AN INTESTINAL DISINFECTANT.

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BRILLIANT as are the results that have followed the employment of antiseptics in modern surgery, there is reason to believe that a limit to the scope of the antiseptic method both in preventing and in subduing disease has by no means yet been attained. The success of preventive medicine is witness to the utility of the same principle in another field. But the application of antiseptics in medicine proper—i.e., in curative as distinct from preventive medicine—is, owing to the lack of accurate practical knowledge no less than to the difficulties involved, at present comparatively restricted. Few subjects, however, are more worthy of careful study than the problem of the more skilful employment of antiseptics in medicine; and this is my excuse for publishing the result of some experiments made with the object of determining the actual value of an intestinal antiseptic.

Izal oil, which is, unfortunately, a proprietary article, was discovered by Mr. J. H. Worrall while investigating by-products met with during the conversion of coal into coke. We are told that it consists chemically of oxidised hydrocarbons having a larger proportion of hydrogen to carbon than the members of the phenol (C_6H_6O) series and a less proportion than the members of the methyl alcohol (CH_4O) series. It has a high boiling point and is insoluble in water. The main preparations are (1) izal oil; (2) an emulsion containing 40 per cent. of the oil and termed "medical izal"; and (3) ordinary izal fluid which is also an emulsion containing 40 per cent. of the izal oil, but not in this case, as in that of the medical izal, specially refined.

The extensive tests made by Dr. Klein[1] with regard to the germicidal properties of izal showed that while ordinary izal emulsion diluted to the extent of 1 in 200 is a disinfectant *in vitro* of no mean power, its toxicity was low, doses of 0·25 cubic centimetre of a 1 in 100 dilution administered to rabbits either by the mouth or subcutaneously producing no detrimental effect of any kind. The experiments of Professor Sheridan Delépine[2] supplemented those of Dr. Klein and confirmed the conclusion as to the value of izal as a disinfectant *in vitro*.

The history of the use of izal as a germicide *in vivo* is as follows. In consequence of Dr. Klein's results Mr. W. Bruce Clarke[3] thoroughly tested the efficiency of izal as a

[1] Report on the Disinfecting Properties of Izal.

[2] Ibid.

[3] THE LANCET, July 1st, 1893, p. 18, and St. Bartholomew's Hospital Journal, September, 1894.

surgical disinfectant and with excellent results. The credit, however, of introducing izal as a disinfectant in the medical sense belongs to Dr. F. W. Tunnicliffe.[4] In his exhaustive report on the pharmacology of izal he remarks that "animals, even after large doses, retain a good appetite and do not suffer from diarrhœa or vomiting. The fæces smell of izal, showing that it is capable of exerting its antiseptic influence throughout the alimentary tract." He also found that "it gives evidence of its presence in the breath." On these grounds, no less than because it combined a low toxicity (0·5 to 1·5 cubic centimetres of the 40 per cent. emulsion pro kilogramme) with high germicidal properties, he recommended its therapeutic trial as a pulmonary or as an intestinal antiseptic.

The event has justified the recommendation. In a recent article in THE LANCET[5] Dr. Tunnicliffe has described some gratifying results obtained by him in a series of cases of phthisis treated with izal. As an intestinal antiseptic, also, the therapeutic employment of izal has so far been attended with considerable success. In a note on the treatment of dysentery during the South African campaign Dr. W. Watkins-Pitchford[6] speaks highly of its efficacy combined with bismuth and chlorodyne. The trial of izal was made at the suggestion of Dr. G. W. K. Crosland. It is stated that "in the few sporadic cases of dysentery which have arisen in our hospital this combination of drugs has in every case brought about a rapid cure, and in those well-advanced cases of a severe type which have come under our care the results of its use have been equally gratifying." Dr. Tunnicliffe has also found izal to be remarkably efficacious in controlling intestinal putrefaction. Under its influence the diarrhœa in several cases of infantile summer diarrhœa ceased, and in another case obstinate phthisical diarrhœa was similarly arrested.

A short time since, when making a comparative investigation of the relative germicidal value of various antiseptics *in vitro*, I was much impressed by the results obtained with izal, and especially with the "medical izal" and with the pure izal oil. I proceeded, therefore, to inquire whether the germicidal action of izal could be proved to take place *in vivo*, and, if so, whether it could be measured. The question to be determined was briefly this: Is the number of micro-organisms in the fæces diminished by taking izal by the mouth, and, if so, to what extent? The method adopted for the quantitative investigation of fæcal micro-organisms was as follows. Eight small flasks were plugged with cotton-wool and sterilised. The first flask contained 100 cubic centimetres of sterile distilled water and each of the other seven contained 90 cubic centimetres of the same. Fæces (free from urine) were collected in a sterile vessel and half a gramme was weighed out carefully in a sterile watch-glass. The watch-glass was then placed in a sterile beaker and the contents of Flask I.—i.e., 100 cubic centimetres of sterile distilled water—were poured over it and thorough mixture was effected by stirring with a glass rod and constantly shaking for about half an hour. The mixture was then transferred to Flask I., which thus contained 0·5 gramme of fæces in 100 cubic centimetres of water, a dilution of 1 in 200. 10 cubic centimetres of Flask I. were next transferred to Flask II. and thoroughly mixed. The dilution made in Flask II. was thus 1 in 2000. With a fresh sterile pipette 10 cubic centimetres of Flask II. were transferred to Flask III. and so on up to Flask VIII. Now one cubic centimetre of Flask I. contains 0·02 gramme of fæces and one cubic centimetre of each of the succeeding flasks represents one-tenth less, or respectively 0·002, 0·000.2, 0·000,02, 0·000,002, 0·000.000,2, 0·000,000,02, and 0·000,000,002 gramme of fæces. By making cultures from one cubic centimetre of one of these flasks, therefore, it is possible to determine the relative abundance of the various micro-organisms present in a given quantity of the fæces. The method combines simplicity with delicacy and by its means a material swarming with micro-organisms and at first sight defying quantitative scrutiny can be bacteriologically analysed with a considerable degree of accuracy.

In the three experiments shortly to be described the izal was given in the form of capsules, each of which contained two minims of pure izal oil. Not more than three capsules were given at a time. They were given with food, one capsule before and one or two after the meal, according to its size. The largest amount given in 24 hours was 24 minims of the oil. No unpleasant symptoms resulted. It should be noted that Dr. Tunnicliffe did not give his patients more than 15 minims of the izal oil per diem and that one day's pause in four was always allowed. But he was dealing with phthisical patients who were also breathing izal vapour during the night.

The following have been the two main points determined in fæcal examinations. 1. The total number of micro-organisms present in agar plates after 24 hours' incubation at 37° C. 2. The total number present in gelatin plates after 48 hours' incubation at 22° C. In addition to these two factors the following particulars were also examined in some cases. 3. The extent to which fermentation, as evidenced by the presence of gas-bubbles, may occur in a series of gelatin shake-cultures inoculated with successive tenths—i.e., with from 0·02 up to 0·000,000,002 gramme of fæces—and kept for four days at 22° C. This is a rough test introduced in this sense by Dr. A. C. Houston.[7] 4. The extent to which growth takes place in broth cultures also inoculated with successive tenths and kept at 37° C. for five days. 5. The extent to which the bacillus coli was present in these broth cultures after 48 hours' incubation at 37° C. 6. The extent to which indol was present in them after five days at 37° C. 7. In the first experiment the virulence of the fæces as evidenced by the virulence of the growth in broth after 48 hours at 37° C. was also determined both before and after taking izal. Three series of experiments in all were made. Experiments I. and II. were made on the same subject. There was a pause of 10 days between the end of Experiment I. and the beginning of Experiment II. Experiment III. was conducted on a different subject. Both subjects were normal adult males. The results obtained are shown in the following tables where they are expressed in terms per one gramme of fæces:—

Experiment I.

Conditions.	Analysis 1.—Normal.	Analysis 2.—After 20 minims of izal oil.	Analysis 3.—After 42 minims of izal oil.
Since experiment began. Time ...	—	24 hours.	48 hours.
Since experiment began. Motion ...	—	Third.	Fifth.
Total number of micro-organisms in agar at 37° C.	440,000,000	140,000,000	60,000,000
Total number of micro-organisms in gelatin at 22° C.	520,000,000	120,000,000	140,000,000
Gas production in gelatin at 22° C.	20,000,000 under 200,000,000	200,000 under 2,000,000	200,000 under 2,000,000
Growth in broth at 37° C.	200,000,000 under 2,000,000,000	200,000,000 under 2,000,000,000	20,000,000 under 200,000,000
B. coli ,, ,,	Do.	Do.	Do.
Indol ,, ,,	Do.	Do.	Do.
Pathogenicity of broth at 37° C.	Do.	Not tested.	Do.

The reduction effected was therefore approximately—

—	After 20 minims of izal oil.	After 42 minims of izal oil.
Total number of micro-organisms in agar at 37° C.	68 per cent.	86 per cent.
Total number of micro-organisms in gelatin at 22° C.	78 ,, ,,	73 ,, ,,
Gas	99 ,, ,,	99 ,, ,,
Growth in broth	No reduction.	90 ,, ,,
Bacillus coli in broth	No reduction.	90 ,, ,,
Indol in broth...	No reduction.	90 ,, ,,
Pathogenicity of broth	Not tested.	90 ,, ,,

The above figures speak for themselves. The pathogenicity test was made by injecting a guinea-pig subcutaneously with one cubic centimetre of the last broth culture that showed

[4] The Pharmacology of Izal, Pharmaceutical Journal, April 18th, 1896.

[5] THE LANCET, Jan. 18th, 1902, p. 146.

[6] The Treatment of Dysentery, Brit. Med. Jour., Nov. 10th, 1900.

[7] Reports to the London County Council on the Bacteriology of Sewage.

growth in 48 hours at 37° C. In Analysis 1 the broth used had been inoculated with one cubic centimetre of Flask VII., equivalent to 0·000,000,02 gramme of fæces, and in Analysis 3 with one cubic centimetre of Flask VI., equivalent to 0·000,000,2 gramme of fæces. In both instances the guinea-pig died in a few days from septicæmia and a bacillus corresponding in morphological and cultural respects with the bacillus coli communis was recovered from its heart's blood. The fact that the virulent bacillus coli was the most abundant organism that developed in broth in both instances, and also the fact that after taking 42 minims of izal oil by the mouth the abundance of this pathogenic microbe was diminished by presumably 90 per cent., are points that go far to explain the clinical success of izal in the treatment of diarrhœa and dysentery.

Experiment II.

Conditions.	Analysis 4.—Normal.	Analysis 5.—After 50 minims of izal oil.	Analysis 6.—After 78 minims of izal oil.	Analysis 7.—32 hours after stopping izal oil.
Since experiment began: Time...	—	48 hours.	Sixth day.	Eighth day.
Since experiment began: Motion	—	Second.	Sixth.	Ninth.
Total number of micro-organisms in agar at 37° C.	200,000,000	260,000,000	20,000,000	60,000,000
Total number of micro-organisms in gelatin at 22°C.	220,000,000	Approximately 200,000,000	20,000,000	40,000,000

The reduction after taking 78 minims of izal oil was therefore in the case of the organisms developing at blood-heat 90 per cent., and in the case of those growing at 22° C. 91 per cent. On the other hand, 32 hours after stopping the drug, the increase was in the case of the former 300 per cent. and in that of the latter 200 per cent.

Experiment III.

Conditions.	Analysis 1.—Normal.	Analysis 2.—After 36 minims of izal oil.
Since experiment began: Time ...	—	Fourth day.
Since experiment began: Motion...	—	Fourth.
Total number of micro-organisms in agar at 37° C.	20,000,000	8,000,000
Total number of micro-organisms in gelatin at 22° C.	10,000,000	6,000,000
Total growth in broth at 37° C.	200,000,000 under 2,000,000,000	20,000,000 under 200,000,000
Total indol in broth at 37° C.	2,000,000, under 20,000,000	200,000 under 2,000,000

The reduction after taking 36 minims of izal oil was therefore in the case of the organisms developing at blood-heat 60 per cent. and in the case of those growing at 22° C. 40 per cent. The total growth in broth, as also the production of indol, were both reduced by 90 per cent.

The total numbers in agar and in gelatin were in both analyses in Experiment III. estimated from plates inoculated with one cubic centimetre of the fourth dilution—that is to say with an amount representing 0·000,02 gramme of fæces. In the two preceding experiments, on the other hand, the dilution used for this purpose was a much higher one—e.g., one cubic centimetre of the sixth or seventh dilutions representing 0·000,000.2 or 0·000,000,02 gramme of fæces respectively. The latter is far more accurate as a gauge of the actual total of the organisms present in the material itself, for, in plates made from the lower dilutions, owing to a larger number of organisms being present, overcrowding occurs and a proportion of them are unable to grow into colonies and so escape being counted. The two analyses, however, in Experiment III. are strictly parallel, the same amount of fæces having been cultivated in each case, so that the numbers are strictly comparable though not necessarily, or, indeed, probably, a gauge of the actual total present in the material itself. The growth in broth is a better index in this sense as a matter of fact.

SUMMARY AND CONCLUSIONS.

The total number of micro-organisms present in a gramme of fæces and developing in agar-plates at blood-heat was reduced in Experiment I. by 86 per cent., in Experiment II. by 90 per cent., and in Experiment III. by 60 per cent. Moreover, the pathogenicity of the fæces was reduced in Experiment I. by presumably 90 per cent. The only condition introduced that accounts for this effect was that izal oil was being taken by the mouth and the diminution of the micro-organisms in the fæces was broadly proportionate to the dose of the drug. Thus in Experiment I. after 20 minims of izal oil the reduction of the blood-heat organisms was 68 per cent., and only after 42 minims did the reduction reach 86 per cent. Again, in Experiment II. after 50 minims of the oil no reduction, but an actual increase, of the blood-heat organisms was noted. But this was only the second motion since the experiment began, and later, after 78 minims of the oil had been taken, their reduction was as much as 90 per cent. On the other hand, in the same experiment 32 hours after izal had been stopped the organisms developing in agar plates at blood-heat were increased by 300 per cent.

I believe that these results justify the inference that not only does the ingestion of izal oil in doses that give rise to no untoward symptoms diminish the number of micro-organisms in the fæces, but that it does so to a very striking extent.

The fact that in spite of the great reduction effected the number of micro-organisms remaining in the fæces was still large is at first sight disappointing. It is, however, no reason for withholding the drug in cases where it is indicated. In the first place the diminution effected may make a great deal of difference to the progress of a given case. Again, for aught we at present know to the contrary, the health of the intestine may be dependent on a state of equilibrium of its bacteriological contents, and a slight disturbance of this equilibrium may be a condition resulting in serious illness. The indication in such a condition would be to restore the disturbed equilibrium, and a drug that can be depended on to achieve this result with certainty and without injury, pain, or even inconvenience, is not to be lightly valued. Thirdly, it is probable that by pushing the dose of izal, but still keeping outside the limit of its toxicity, the number of fæcal organisms may be still further reduced. Again, by combination of izal with other drugs and by careful dietetic treatment it may be possible to reduce still further the pathogenicity and foulness of the intestinal contents.

As in the case of other remedies, however, the scope of izal as an intestinal antiseptic is a matter that can only be eventually established at the bar of clinical experience. Possibly other drugs may be still more efficacious for the purpose stated. But my observations so far with salol and with β naphthol *in vitro* have not led me to form the opinion that they are likely to be among them. This opinion, however, is advanced with all reserve, as I have not yet tested these drugs *in vivo* in the same way as izal.

The success of izal as a remedy for diarrhœa and for dysentery is, according to the authorities cited, a clinical fact. Whether by means of this or another intestinal germicide it will ever be possible to control typhoid fever, appendicitis, &c., at the site of infection is a matter for the future to determine.

In conclusion, I wish to record my thanks to Dr. Houston for much valuable advice.

TWO CASES OF LUPUS VULGARIS SUCCESSFULLY TREATED WITH UREA PURA AND THE X RAYS.

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A GREAT deal of interest has been centred on lupus vulgaris of late, owing to the introduction of new methods of treatment. Much has been written of the value of the Roentgen rays in this disease, and many successful cases have been recorded. The Finsen light treatment is being extensively employed and great things are expected from it.

The idea of using urea pura for lupus suggested itself to my mind after reading a most interesting paper by Dr. H. Harper[1] of Nottingham on the value of pure urea in phthisis. I had in my wards at the asylum two very bad cases of lupus vulgaris, and I decided to put them both on urea and to give them daily exposures to the x rays. Photographs were taken before and after the treatment.

The general outline of the treatment employed was as follows:—On May 21st, 1901, in the one patient, and on June 7th, 1901, in the other, I ordered urea in 20-grain doses three times a day and commenced the exposures on these dates respectively. The x-ray apparatus used was a 10-inch coil, with a platinum interrupter, and a Crookes's focussing tube with a spark length of six inches. The exposures were made daily and were of seven minutes' duration, at a distance of from two to three inches from the face. The voltameter registered 12 volts and the indicator of the galvanometer oscillated between four and six ampères. It was never found necessary to protect the healthy skin from the rays, as the only effect produced was a slight red areola round each scab.

In the July number of the *Practitioner* Mr. A. H. Buck, of the Sussex County Hospital, published a paper entitled "A Case of Lupus of 12 years' standing Treated with Urea Pura and Cured." I read this monograph with great interest and found that his treatment differed from mine in that he combined cod-liver oil and malt extract with the urea and applied some ointment as a local dressing, the Roentgen rays not being used at all.

CASE 1.—The patient, a woman, aged 30 years, was admitted into the Kent County Asylum on Feb. 1st, 1901. The following note, taken from the case-book, shows her condition on admission: "She is demented and quite lost to her surroundings. She is weak, badly developed, and poorly nourished. She has chronic lupus of the face. There is a suspicion of tubercle at the right apex. The heart's action is weak." The lupus extended from ear to ear, spreading out like the wings of a butterfly. These two areas were connected by extension of the disease over the bridge of the nose and the upper lip. The whole of the cartilages forming the tip had ulcerated and the lower ends of the nasal bones were visible through the weak and indolent tissue. The glands of the face and of the submaxillary and cervical regions were enlarged on both sides, but especially on the left. There was distinct softening in some and fluctuation could easily be felt. The softening had proceeded so far in the one immediately in front of the left ear that just as I was exposing the photographic plate the pus burst through the skin and ran down the face. The patient was unable to breathe through the nose, owing to blocking of the nasal passages by dried mucus and pus. Her breath was extremely foul, and she was very weak and anæmic. Her pulse was soft, weak, and rapid. The action of her heart was very feeble. There was slight impairment of the percussion note over the right apex. The breath sounds were somewhat harsh. The patient's weight was six stones five pounds. The dose of urea at first was 20 grains three times a day. It was gradually increased up to November, when the patient was taking as much as 120 grains three times a day. Since July I have followed Mr. Buck's example and added cod-liver oil and malt extract to the mixture. On Sept. 30th, 1901, as all active signs of the disease had disappeared, the exposures to the x-rays were discontinued, and since that time the redness has gradually subsided, and a thin, smooth, white scar now occupies the place of the apple-jelly nodules and ulceration. On examination of the chest on March 2nd the difference in the percussion note was so slight that had I not the knowledge that the right lung had been affected I should have said that there was no difference. The breath sounds were not quite pure on the right, but they were not so harsh as when the patient was admitted. The heart sounds were regular and of normal volume. The pulse was 78, regular, full, and well maintained. She has recovered from her anæmia. She sleeps well and eats well, and is altogether in very much better general health. She takes some interest in things going on around her, talks a little, and is, as a matter of fact, much more trouble to manage than on admission. There was no increase in the percentage of urea in the urine, for out of several estimations the highest percentage found was 2 (the normal). Her weight is six stones six pounds.

CASE 2.—The patient, a woman, aged 30 years, was admitted into the Kent County Asylum on March 1st, 1901. The following are notes from the case-book taken on admission: "She is demented. No evidence of mind. She never speaks. Cannot make her wants known in any way, and is most filthy and degraded in her habits. She is very weak, badly developed, badly nourished, and very anæmic. Has lupus on face. Heart's action rapid and weak. Lungs very weak. Weight five stones 13 pounds." When the treatment was commenced on June 7th she was in a very low condition. Her face was one mass of ulceration and dried scabs. Her eyelashes were turned inwards and swept the cornea. Pus welled out of both eyes from the conjunctivæ, which were red and inflamed. Her eyes were directed downwards and inwards. It was very doubtful whether she could see or not. On the left side of the nose, over the situation of the nasal duct, was a small sinus from which thick creamy pus exuded. Her upper lip was enormously swollen and protruded one and a half inches beyond the lower. The mucous membrane of the nose was red, swollen, and ulcerated. Her breath was very foul-smelling. The submaxillary, cervical, and supraclavicular lymphatic glands were greatly enlarged, many being in a condition of softening. Almost the whole of both cheeks were involved in the disease. For the first fortnight I had the face dressed with olive oil night and morning to soften the scabs, which I then removed with a pair of forceps and a warm solution of chinosol. This was the only local application, and was discontinued as soon as all the scabs had been removed. She never spoke but made unintelligible sounds, and this I believed was due to the enormous size of the upper lip and the blocking up of the nose with dried mucus and pus. The dose of urea was gradually increased from 20 grains three times a day to 120 grains three times a day, and, just as in the last case, since July cod-liver oil and malt extract have been added. She had exactly the same Roentgen-ray treatment as the first case, but she improved much more rapidly, and as a result the exposures were discontinued on Sept. 3rd. I think that this is accounted for by her not having had the disease for such a long time as the other patient had. Since that time the redness due to the exposures has gradually subsided, and at the time of writing (March 2nd) a smooth white scar occupies the place of the ulcerated surface. There is no discharge from the eyes, and the sinus over the nasal duct has quite healed. Her lip has returned to its normal size and she speaks quite distinctly at times. She can see very well and appears to take much more interest in her surroundings. It was impossible to get a 24 hours' specimen of this patient's urine, so I have been compelled to make my estimations from the specimens which I could secure, no matter how small the quantity. But in no case did I discover more than the normal percentage of urea, the average being about 1·7. There are no signs of phthisis in the lungs. The heart sounds are normal. She has gained flesh, sleeps well, eats well, talks, chatters, and sings, and at times she is very violent and troublesome. Her weight is five stones 13 pounds.

Remarks.—The points to which I particularly wish to draw attention are: the low-pressure tube used (viz., six inches) and consequently the absence of any severe dermatitis in the neighbouring healthy skin; secondly, the comparatively short duration of the treatment and the small amount of trouble entailed in carrying it out; thirdly, the great improvement in the general health—lungs, heart, mental condition, and anæmia; and, lastly, the absence of all puckering of the skin and unsightly contractions, so commonly seen in cases treated by the older method of scarification. The great objection undoubtedly is the expense of the urea.

Maidstone.

[1] THE LANCET, March 9th, 1901, p. 694.

REVACCINATION OF TRAMPS.—At the meeting of the Stonehouse Board of Guardians held on Feb. 27th the medical officer (Mr. T. Leah) stated, in reference to the revaccination of tramps, that unless he inspected the cases afterwards the Local Government Board auditor might perhaps not allow the fees, and he did not wish to keep tramps in the workhouse for a week in order to inspect them. Eventually the matter was referred to the house committee.—The Torrington (Devon) Board of Guardians at its meeting on Feb. 22nd decided that all vagrants should be vaccinated on their admission to the workhouse—a procedure which has also been enforced by the Bideford Guardians.

ABDOMINAL HYSTERECTOMY FOR CANCER OF THE UTERUS;

WITH NOTES OF TWO CASES.

BY ROBERT O'CALLAGHAN, F.R.C.S. IREL.,
SURGEON TO THE FRENCH HOSPITAL;
AND
HENRI DARDENNE, M.D. EDIN., M.R.C.P. LOND.,
PHYSICIAN TO OUT-PATIENTS AT THE FRENCH HOSPITAL.

CASE 1. *Cancer of the cervix treated by amputation, followed by pregnancy, necessitating Cæsarean section with complete hysterectomy.*—On March 11th, 1901, Dr. Dardenne was called to see a woman who had been married for 17 years and had never been pregnant. She was 36 years of age. When Dr. Dardenne saw her she complained of pain in the hypogastric region and also of a muco-sanguinolent discharge of a fœtid odour. She was uncertain as to the exact date of the commencement of her present illness, except that four months previously she had a smart attack of hæmorrhage which had compelled her to keep her bed for three days. Ever since she had been troubled more or less with the discharge of which she now complained. Previously to this she had been in good health except for obstinate constipation. Her general surroundings were extremely good and had always been so. Her family history was good. Her facial expression was somewhat anxious and her complexion was pasty. She was stout in body and had no idea that she was seriously ill. There was no œdema; in fact, no morbid appearances could be detected. The temperature was normal; the pulse was 80. On making a vaginal examination, Dr. Dardenne noted at the time that the cervix was invaded by a hard cauliflower growth, and at the back of this there was a crater-like fissure on the right and a similar fissure was present on the anterior and posterior surface of the cervix. On bimanual examination a hard mass of indurated glands was felt in the right iliac region. The bladder gave no trouble to the patient. Dr. Dardenne diagnosed cancer of the cervix and advised her to become an inmate of the French Hospital. This she did and when seen the next day by Mr. R. O'Callaghan he confirmed the diagnosis and operated on the following day. With the knife and cautery he removed all that was possible of the affected tissues. The disease being so far advanced he did not think that a hysterectomy would be of much benefit to the patient. She left the hospital on March 30th. On Nov. 2nd Dr. Dardenne saw the patient again and on examination found that she was five months pregnant. She had quickened a fortnight before. Since the operation she had some slight bleeding which she attributed to her periods. On Dec. 24th labour pains came on and she entered the French Hospital on Christmas Day. The whole of the lower segment was one mass of cancer and after 18 hours of labour pains the little finger could not be introduced through the hard mass. At 8 P.M. Mr. O'Callaghan performed a Cæsarean section. An incision four inches long was made in the middle line and the uterus was brought well forward and incised; the child and the placenta were rapidly extracted without any difficulty; there was some sharp hæmorrhage which was easily controlled by the house surgeon. The greatest difficulty experienced was now to be met with in the complete removal of the uterus. The new growth having destroyed all landmarks made it difficult to get into the vagina safely without injuring the bowel, the bladder, or the ureters; this, however, was done successfully, after very tedious manipulation owing to the very fat parietes. The ligatures were brought into the vagina and the peritoneal vault was sutured, the abdominal wound was then closed, and the patient was quickly removed to bed, having borne the operation very well. She, however, never seemed to rally from the shock and died in 48 hours.

CASE 2. *Cancer of the cervix complicated by cystic ovary and adhesions treated by complete abdominal hysterectomy.*—A woman, aged 34 years, came to Dr. Dardenne in the out-patient department of the French Hospital on Dec. 9th, 1901, complaining of a bloody discharge from the vagina which had been preceded for about three years by a muco-purulent one. She had been married for 18 years; she had had two children, the younger being 16 years of age, and one miscarriage. Menstruation began when she was 15 years of age, and up to three years previously she was quite regular when she had a period lasting for 18 days, and ever since then she had been irregular. Her family history was good. She was admitted into hospital under Mr. O'Callaghan and on the following day she was examined under ether. The uterus was fixed and the cervix was enlarged and of a dark-red colour; bimanually the uterus was found to be enlarged and an enlarged ovary was felt on the left side. The uterus was fixed and could not be brought down to the vulva. A portion of the posterior lip was removed with the knife and sent to the Clinical Research Association. Mr. J. H. Targett reported that it was an epithelioma. The patient having given her consent for the removal of her uterus she was operated upon on Jan. 10th, 1902. The abdomen was opened by a three-inch incision. The right ovary, which was cystic, was removed as well as the left, when it was freed from adhesions. The uterus was with difficulty freed from old adhesions, then well drawn out and removed in the usual method. The ligatures were drawn into the vagina, and as there was considerable oozing a strip of cyanide gauze was passed into the vagina for a drain. The peritoneal vault was closed over all and the abdominal wound was sutured in two layers. The patient made an easy recovery.

Remarks by Mr. O'CALLAGHAN.—In Case 1 it is interesting to note that after 17 years of barrenness this poor woman became pregnant after amputation of her cervix for malignant disease followed by a thorough efficient use of the cautery. It was a matter of regret that she did not come into hospital, as we had arranged she should do, before labour, which came on at seven months, and she was, unfortunately, in labour for 18 hours and the membranes had ruptured (an important factor as regards the result). She was very tired as a consequence and for an hour before operation, while finding me and an anæsthetist, the house surgeon gave her frequent inhalations of chloroform. It was an emergency in which the difficulties were, I am glad to say, rare. The patient never seemed to rally from the shock of the operation, although she was given hypodermic injections of strychnine sulphate by Dr. H. Leclezio, and despite his unremitting care she died in 48 hours. A post-mortem examination could not be obtained, but the right breast was found to contain a new growth which had affected the axillary glands. Such cases are, fortunately, rarely met with, and demand prompt action if only to prolong life for a little while. A simple Porro's operation, and fixing the stump of the uterus in the abdominal wound might have saved shock and prolonged life in this case for a short time, but it would not have been a good precedent.

In Case 2, although the uterus was fixed and could not be drawn down into the vagina the history of the case and the appearance of the growth suggested chronic endometritis with erosion more than epithelioma. As it would have been very difficult, if not impossible, to remove the uterus by the vaginal route I decided to do a complete abdominal hysterectomy. The appendages on both sides were adherent and one ovary was cystic. This caused a good deal of venous oozing which was treated by packing with a strip of gauze, leaving the end in the vagina; this drain was removed in 48 hours, the patient making an uninterrupted convalescence. I have no hesitation in saying that when the uterus is at all fixed the abdominal route is the method of selection in these cases, as the operation is more satisfactory from a surgical point of view, and the ovaries and tubes can be removed, no matter how large or adherent they may be, which I hold should be done in all cases of hysterectomy, as they are absolutely useless after the removal of the uterus and can only become nuclei for further pelvic mischief.

I have to thank the house surgeon for his efficient assistance in these cases and for his intelligent preparation and after-care of them.

ELECTRIC SHOCKS.[1]

BY F. B. ASPINALL.

I BRING this question before the institution principally with a view of obtaining particulars of severe electric shocks which have not proved fatal, and therefore I trust that any one who from his own experience can give particulars of cases will kindly do so. My reason for trying to obtain this

[1] A paper read before the Institution of Electrical Engineers on Feb. 27th, 1902.

information is that I believe we, as electrical engineers, can render great assistance to the medical profession by doing so; and possibly by enabling them to tell us some better methods of rendering aid to those who, unfortunately, are the victims of accident we shall be well repaid.

I have been personally deeply interested in this subject for some years and have collected from my own experience and from that of friends, both in this country and abroad, particulars of as many cases as possible. I have also, whenever I could, made it a rule to see the man who received the shock and also any witnesses. All cases, therefore, which I have chosen as of sufficient importance to mention in this paper are, to the best of my belief, thoroughly accurate and trustworthy. In obtaining this information I have been much struck by the fact that it is most difficult to obtain a really accurate description from the victim or witnesses of what actually does occur, and this can hardly be expected when one considers the circumstances; but still, if I only mention what they are absolutely certain about, these cases can be taken as fairly typical.

I should like to say that, not being a medical man, I have no medical knowledge, and therefore I trust that any medical man reading this paper will take this into account if I say anything which to him may seem absurd.

In discussing this question with my personal friends in the electrical profession I find that there are many points upon which more information is required, and therefore these points may be summarised as follows. 1. Is everyone susceptible to an electric shock? 2. Is a person suffering from disease more liable to be fatally injured by an electric shock than a person in good health? 3. Does the physiological condition which a person is in at the time of his receiving a shock make any difference? 4. Does the path which the current takes through the body have any effect as regards the shock proving fatal? 5. Does the question of contact made, and whether burning takes place or not, have any effect as regards the shock being fatal? 6. Can a person receive a fatal shock without giving the "cry," and also can he speak after receiving a fatal shock? 7. Is an alternating- or a direct-current shock more likely to prove fatal? 8. Cannot medical men give us some more certain method of saying whether a man is dead or not? 9. Cannot something more be done than at present to help those who receive a severe shock? I will now proceed to discuss these points separately.

1. *Is everyone equally susceptible to an electric shock?*—In considering this question I believe I am stating the opinion of the medical profession when I say that there is no absolutely reliable proof whether everyone is equally susceptible or not. Dr. T. Oliver[2] says: "We have no positive proof that one individual is more susceptible to an electric shock than another. It is, as already stated, rather a question of the amount of current, and whether it wholly enters the body." My own opinion is, and I hope to prove it in this paper, that not only are different people differently affected, but the same person under different conditions does not feel the same. Of course, if one could obtain two people alike in every respect and subject both of them to exactly the same voltage and current, and also in every respect get the same conditions, no doubt they would both feel the same, although they might describe it differently; but when it is considered that moistness, callosity, and condition of skin, nervous temperament, the path which the current takes through the body, health or disease, drunkenness or sobriety, whether the sufferer is awake or asleep, area, the excellence and nature of contact, familiarity with shock, and no doubt other causes, as I shall point out later, all play most probably an important part in deciding what one feels, I think that my opinion will be accepted.

2. *Is a person suffering from disease more likely to be fatally injured by an electric shock than a person in good health?*—As an electrical engineer this is a most difficult matter for me to discuss; but from cases which have come under my own observation, and which I have heard of from friends, in whose veracity I can place the most implicit confidence, I think I can prove that this question is of the utmost importance. Some years ago a number of friends were in the habit of measuring their resistance periodically, and it was found that one man was always the lowest, although they all varied. This man was also abnormally sensitive to an electric shock, as he could feel even so low a voltage as that from three Leclanché cells. It was afterwards found that he was suffering from kidney disease, and although I should very much like to measure the resistance of others similarly affected I am afraid to do so in case I might injure them. This seems to indicate that the resistance of the body may be altered by disease, and it is most probable that the skin, by fulfilling the functions which by rights belong to the kidneys, had a lower resistance due to the impurities thus removed from the body. (It is well known that in kidney disease medical men give medicine to make the skin help the kidneys.) In a central station with which I was connected it was the habit of the men to give an electric shock from a magneto-machine to visitors, and although it was found that different people seemed to feel differently, yet one boy could stand more than anyone else. He was, however, unfortunately of weak intellect. Another case of which I heard was at a bazaar where money was placed in a bowl of water charged from a Rhumkorff coil. One woman took the money out every time and had to be paid to go away, as she nearly made them bankrupt. She also was of weak intellect. No doubt this insensibility was due to the brain being affected. It appears, therefore, fair to say that a diseased person may be either more or less susceptible according to what disease he may be suffering from.

3. *Does the physiological condition which a person is in at the time a shock is received make any difference?*—The first point which naturally occurs is, Does a person in a heavy perspiration stand a better chance than one who is in a normal condition? and to illustrate this I think I may quote the following case. A man had been doing very heavy work which made him perspire freely; to rest himself he sat down on a transformer, which was earthed, and in leaning back his head touched an inner terminal; as the outer was earthed he received a 2000-volt shock. He was wearing a thick flannel shirt, which was wet with perspiration. The result was that he received a most severe shock, a hole being burnt in his trousers, and the back of his head and his buttocks were severely burnt. This man, I think, should have been killed, but he was not even insensible. Surely, this seems to show that the sweat shunted the current, thus saving his life; although the burning probably protected him, as I will show later.

Again, would a man, when drunk, be less liable to be fatally injured? and to illustrate this I give the following case. A man working in a transformer station as a labourer touched an inner terminal with one hand and an outer with the other, the potential difference being 2000 volts. It was found out afterwards that this man was a heavy drinker and was under the influence of drink when he received the shock, which did not even make him insensible. It is only fair, however, to state that his hands were exceptionally callous, due to the fact that he had been working as a gas-stoker, and also that his hands were severely burnt. Personally, however, I think he received quite enough to kill him, and that his being drunk had something to do with his not being killed.

Next, Are persons less liable to be killed when they are asleep? Some years ago I was carrying out a contract which necessitated all the work being done at night. One of the men employed was always going to sleep, so the other men as a practical joke gave him a shock whilst he was in this condition from a magneto-machine capable of ringing through 30,000 ohms, but although they tried all they could he did not awake. As they thought that this was peculiar the men called my attention to it, and I personally saw him receive a shock without taking any notice of it. I may also say that I arranged for my assistant to give me a shock when I was in bed asleep, and although two witnesses guaranteed that he had done so I felt nothing. Illustrating this, I should like to mention the following case. A man was stationed to watch a cable under test charged to 5000 volts, and going to sleep he fell on to it. He was most severely burnt about the hands but was not killed.

Of course, with so few cases it is impossible for me to say that my deductions are absolutely correct, but I bring them forward as I think that they are of profound interest both to the electrical and to the medical professions.

4. *Does the path which the current takes through the body have any effect as regards the shock proving fatal?*—Although I have been present in three cases where a medical man was called in to attend to a man who had received a severe shock I have never been asked where the current entered and left the body, and this, to me, has always been a complete puzzle, as amongst all electrical engineers there

[2] Allbutt's System of Medicine, vol. v., p. 856.

is, I know, a firm belief that the path which the current takes is of the utmost importance, and therefore in handling high-tension apparatus we always try not to make contact in such a way that a vital part is directly in the circuit. To illustrate the different paths which the current can take I will give a few cases which have come under my notice and also what the victim felt most: from hand to hand, a blow in the chest; from the right hand to the right foot, nothing; from the right hand to the left foot, nothing; from the right hand to both feet, nothing; from the left hand to the left foot, a blow in the back of the neck; from the left hand to the right foot, a blow in the back; from the left hand to the head, a blow on the top of the head; and in the case of a current from the head to the buttocks, it could not be ascertained if anything was felt. Of course, I cannot say why they should feel differently, but I bring these facts forward as perhaps medical men can give an explanation. I think, however, that it proves that different organs of the body are affected. Dealing with this part of my subject the following two cases may be given. A man was oiling an alternator and he touched the inner brush accidentally with his elbow; his right foot was on the earthed frame of the machine and his left foot was insulated. The pressure was 2200 volts, and although he gave the cry and was sensible till the circuit was broken he could not get away. He remembered them running to shut the machine down, but became insensible when this was done and was treated for 40 minutes by artificial respiration before he showed any signs of life. One would have expected this man to be killed, but it is only fair to say that he was badly burnt on the elbow and the foot. In the second case a man was adjusting an arc lamp. He had his left foot earthed, and with his left hand he touched the carbons. I am unable to state the number of volts that he received, as I could not ascertain where the current earthed; but he was killed. There was only a slight discolouration noticeable and he was not burnt. I will discuss the question of burning later, but I think it is a fair conclusion that the left side is more vulnerable, and I believe the reason is that the valves of the heart on this side are more easily damaged. To my mind these cases prove conclusively that the path which the current takes is a most important factor.

5. *Does the question of contact made, and whether burning takes place or not, have any effect upon a person's chance of being killed?*—In my opinion the question of contact is perhaps the most important of any arising when a person receives a shock, and I should like to go into it rather minutely. In our ordinary every-day work perhaps the question of contact receives more attention than anything else, as not only is it a question of good contact, but the area of contact must be sufficient to carry the current. Now, when a man receives a shock this is equally true, and although it might be safe under ordinary conditions to work with even a high voltage, yet if he really did his best to kill himself he could most probably manage it with even a small voltage, provided that he had a sufficient area of contact. To illustrate what an important part this area of contact plays I had my resistance measured holding a No. 20 B.W.G. copper wire between the finger and thumb of each hand, and afterwards I connected these two wires to two pennies and held them in the same way. With the pennies my resistance was 20,000 ohms lower. I therefore think if the area of contact were only sufficiently large the resistance would be practically nothing. Of course, if the skin were wet the area necessary to get no resistance would be much less, but as one does not work with wet hands I need not consider the question. On the other hand, if the skin were oily it would be much more.

Another point on which I would lay particular stress is that the area of contact to get the same resistance in different persons would not be the same, and even with the same person in different parts of the body the area of contact would have to be changed. To illustrate this I measured the resistance of six people, picked haphazard, from thumb to thumb, and although I was careful to obtain what I believe was the same amount of contact in each case, yet A measured 30,000 ohms, B 50,000, C 60,000, D 60,000, E 100,000, and F over 100,000. This was due most probably to different thickness and moistness of the skin. As regards the same person, I had my resistance measured from thumb to thumb, which gave 100,000 ohms, but from the heel (where the boot rubs) to the big toe I got 200,000 ohms, although in each case I believe the same contact was made.

The question of area of contact also plays an important part from another cause, as, if the area is small, the chance of burning is largely increased, not only from the fact that heat is generated at a bad contact, but that it is easier to form an arc, which causes the burning to be still more severe. I shall discuss the question of burns by alternating and direct current later, but a direct current burns much more severely, especially at the positive pole.

No doubt it may be questioned why I am laying so much stress upon a point which is thoroughly understood by everyone, but my reason for doing so is that I believe this question of burning is a wonderful provision of nature to protect us against fatal shocks, as the burning not only numbs the nerves and thus prevents us from feeling, but will also, I believe, be found to increase the resistance, thus preventing the current passing. It is impossible for me to experiment on burnt live flesh, but I think it would well repay a medical man to do so. The two following cases may be cited. A man who was working on a high-tension switchboard received a 2000-volt alternating shock and was killed. I myself saw the body and noticed that there was only a slight burn on the left hand, no other mark being found on the body. It was therefore impossible to say how the man really received the shock. I am sure the burn was only slight, and as I have had considerable experience of electrical burns at various voltages (both alternating and direct) I think that I am in a position to judge as to their severity. The second case was that of a man who received a 2000-volt alternating shock from hand to hand and in which death occurred. The engineer on watch at the time told me that only slight burns were on each hand.

In the case already mentioned of a man who was killed on an arc circuit only a slight redness was seen on his hand Of course, this may not always be the case, as it is quite possible that the victim in his struggles to escape may reduce the contact and therefore may cause severe burning after he has received sufficient current to kill him. In previous cases which I have mentioned in which the victim recovered severe burning took place and I shall mention more later.

I know I am laying myself open to severe criticism in bringing forward this theory, as the majority of electrical engineers and also medical men believe that severe burning means a severe shock, and to illustrate this I cannot do better than again quote Dr. Oliver[3]: "If the skin at the time of contact was moist, so much more the burning. If a current sufficient to produce this severe local burning pass through the body fatal results are more probable." My own opinion is, however, from reasons stated above, that moistness of the skin reduces the chance of burning as it ensures better contact, and if no burning takes place efforts to help the victim should be redoubled if it is thought that he has received a shock, as it is quite possible that, owing to this misapprehension, he may be thought to be ill from some other cause. I should like to say a good deal more on this question, but as the time is short I will proceed to the next point.

6. *Can a person receive a fatal shock without giving the "cry," and also can he speak after receiving a fatal shock?*—It may be of interest to attempt to describe the "cry," and as I have heard it three times, and have discussed this matter with others who have heard it, I think it can be accepted that this cry is best described as a rapid drawing in of the breath, followed by a half sigh, half shriek. In each of at least a dozen cases of more or less severe shocks that have been reported to me the victim gave the cry, but in the case in which I personally saw the victim three witnesses were sure that he did not give it.

With respect to the question as to whether a person can speak after he has received a fatal shock I may say that I have always thought this impossible; but in the above case the victim was asked if he was hurt and he said: "I am all right," and yet directly afterwards dropped down dead. Of course, one may ask: Did he really die from an electric shock? but as a post-mortem examination was made and the medical man satisfied himself that all the organs were healthy I think that there can be no doubt about it. I think, therefore, that further information is most urgently required, but at present one can only say that a man need not give the cry and that it is possible for him to speak after a fatal shock has been received.

7. *Is an alternating- or a direct-current shock more likely to prove fatal?*—This question may be looked at from two points of view. First, if a man is killed by an alternating

[3] Loc. cit.

shock, would not a direct-current shock prove equally fatal provided the conditions in each case were exactly the same? Secondly, is there anything in the actual working conditions which makes one supply more dangerous than the other? Considering this from the first point of view, the question immediately occurs, Do both kinds of shock affect the body in the same manner from a medical standpoint? Of course, I am not in a position to judge, but as a direct-current causes electrolytic action, and an alternating-current does not, it seems that more must take place with direct-current than with alternating-current shock. It is also open to discussion whether, disregarding electrolytic action, the two act the same, as the alternating-current shock from its nature must have a spasmodic effect, whilst a direct-current shock seems to paralyse at once. From my own experience of shocks, I am certain that the after-effect of a direct-current shock is worse than that of an alternating current. When looking at the matter, however, from an electrician's point of view, I can see a great difference, as there is no doubt that if contact is made with metal of such a shape that it cannot be gripped, and the current passes from hand to hand, the direct-current shock seems to knock the victim down, whilst an alternating-current shock seems to draw him closer and to tie his body as far as possible into a knot. On the other hand, if he can grip the metal the direct-current shock seems to hold him tighter than does that of the alternating current. Of course, I am only judging from what I have seen and felt myself.

Another influence which I believe plays an important part is the different action which the two currents have in breaking down a fault. For instance, if the insulation is faulty when current once commences to pass, the direct current will break a fault down quicker than an alternating current. No doubt this has some effect when a shock is received, as most probably the direct-current shock would reach its maximum before the alternating-current shock, and, therefore, if a person were only in circuit for a short time, the direct-current shock would have the greatest effect. On the other hand, more burning will take place with direct-current shock than with that of the alternating current, and, as I have pointed out before, this is most probably a protection. My own opinion is that both currents will kill a man equally well, provided that the conditions are the same, and that death ensues from an electric shock.

Although not strictly included in this paper, I should like to draw attention to the fact that an arc is more easily started with direct than with alternating current, and that when once started it is more easily maintained. This is evident from the fact that a fuse which is quite safe on alternating- is utterly useless on direct-current circuits. From the above cause it is possible for a man to be severely burnt on a continuous current, and, therefore, all cases of exceptionally severe burning, if they occur on a low-tension supply, should be thoroughly investigated to prove whether death occurred from a shock due to burns or from an electric shock. The conclusion which I come to is that if death occurs from an electric shock, both are equally dangerous; but if death occurs from burns the continuous-current shock is more dangerous. To make myself thoroughly clear, I should also like to say that although burns are a protection against electric shocks, yet if carried to extremes they may themselves cause death due to shock.

In considering the second question, it must be remembered that although the majority of deaths from electric shocks occur with alternating currents, yet the potential usually worked at with an alternating current is higher than with a direct current, and therefore the conditions required to cause death have to be more favourable with direct current than with alternating current.

Taking the actual voltage required to cause death, independently of nature of supply, I should say that at below 600 volts the conditions must be abnormally favourable; at below 1000 volts they must be favourable; and at above 1000 volts the higher the pressure the more easy it is to get the conditions necessary to cause death. In comparing the relative dangers of the two sources of supply, it must be remembered that even with the same voltage and conditions it is quite possible to meet with an accident from quite different causes due to the kind of supply. For instance, with an alternating supply where the outer is earthed, nine times out of 10 a shock is received, not by getting into the circuit proper, but by touching some metal which has become charged owing to its not being properly earthed or to not realising that any earthed metal is practically the outer. I think, however, that accidents from this cause will be fewer in the future now that the precautions required are thoroughly understood, and, more important still, that we are able to obtain trained men. On the other hand, with direct current, most accidents occur due to an earth on circuit causing a man to receive a shock when he accidentally earths the circuit in another place through himself.

The conclusion which I come to is that there is nothing more dangerous in one system than in another. It is purely a question of voltage and of the conditions being favourable, and it must be remarked that as many conditions have to be favourable it is really so difficult to get killed, even with a high voltage, that practically, with our present knowledge, the chance of this occurring is no greater than in numerous other occupations where a person is likely to meet with an accident.

8. *Cannot medical men give us a more certain method of ascertaining whether a man is dead or not?*—In the *Electrical Review* Rules, which I consider most excellent and, indeed, invaluable, it is recommended to ascertain if the sphincter muscle is relaxed; but as this is for obvious reasons objectionable, and also to a non-medical man most difficult to judge, I ask medical men if they can tell us some better method. If they only knew what one feels when, after doing all one knows to restore a fellow-worker to consciousness, the question arises, Am I simply manipulating a dead body? I feel sure that they would do all they could to tell us how to arrive at a definite conclusion.

9. *Cannot something more be done to help those who receive a shock?*—In discussing this question the first thing which strikes me is how utterly we engineers are in the dark as to what really happens to a human body when death is caused by electricity. Of course, death is a stoppage of the functions of the body, and, looked at from an engineering point of view, I think the organs of the body can be best described as follows—namely, the lungs as the boiler, the heart as a pump, and the nervous system as the mains to transmit signals from the controlling power (the brain) to the various machinery operated, and the arteries and veins as feed-pipes. Now, to my mind, what we want to know is, what breaks down when a shock is received? Are the lungs so damaged that they are useless for further work? or is the pump, the heart, broken in any way that it cannot work—for instance, are the valves ruptured or the arteries (viz., the feed-pipes) broken? or is the blood (the feed water) so decomposed that it precipitates and chokes the pipes? or cannot signals be sent from the brain, owing to the nerves being paralysed? or what happens? Looked at from this point of view, the first thing which requires clearing up is, Are the conditions found inside the body different when death has been caused by electricity from those found when it occurs from shock from fright, excitement, burns, amputation of a limb, &c.? Of course, I, personally, cannot say, but from medical evidence which I have read it appears as if the only thing which is unusual is that the blood appears different post mortem; but I believe that this is open to discussion. I myself think, however, that when it is considered, as I have pointed out previously, that an idiot does not seem to feel a shock so severely as an ordinary person, and also that during sleep less is felt, the truth will probably be found to be that electricity acts like an anæsthetic, such as chloroform. My reasons for believing this are also due to the fact that in two cases of an electric shock where death would have been expected the men recovered, in my opinion, from the head being lowered, thus flushing the brain with blood, which is exactly what medical practitioners do when they want to revive a patient who has collapsed when under chloroform. The cases I give in this connexion are as follows. A man received a 2000-volt shock from hand to hand, but was not badly burnt. He was insensible; his heart could not be felt beating and his breath did not cloud a mirror; his eyes were turned so that the white of the eyes only could be seen, his jaw was dropped, and thus seeing the man I could have been certain that he was dead. This man gave the cry and an engine-driver who picked him up stood him on his head and thumped his chest, his reason being, as he put it, to start the blood flowing, and, as the heart is a pump, to free the valves if they were stuck. After 45 minutes' artificial respiration this man recovered. In another case a man received a 2000-volt shock from hand to hand. He was standing on a pair of steps. As no one was present I cannot say if he gave the cry, but at any rate he fell head first off the steps about four feet to the floor. He came round without assistance in about 25 minutes. It is only fair to say that his hands were badly burnt.

The question, therefore, which I wish to ask the medical profession is, Should we adopt the same treatment as is used for collapse from chloroform, and when a man receives a shock should we, before applying artificial respiration, hold the body for a few seconds head downwards at an angle of 45°, thus flushing the brain and stimulating its action? I bring this theory forward with the greatest diffidence, but as I have actual cases to bear me out and also other evidence which points the same way, I think that, considering its vital importance to humanity, I am justified in doing so in the hope of its being investigated by the medical profession, but until this has been done no one realises better than myself that my evidence cannot be considered as conclusive.

In conclusion, I can only say that I am fully aware of the shortcomings of this paper, but it is a real attempt possibly to save a human life by thus endeavouring to get members to give information on this question which so immediately concerns us as electrical engineers.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

LATENT VACCINIA.

BY J. W. WASHBOURN, C.M.G., M.D. LOND.,
PHYSICIAN TO GUY'S HOSPITAL AND TO THE LONDON FEVER HOSPITAL, ETC.

THE patient, a girl, aged two and a half years, was vaccinated two years ago in four places, only one of which took, and that very slightly. She was seen by Mr. Percy Rose on Feb. 3rd, with the history that she had been ailing for three days. The tonsils were red and swollen, and the sub-maxillary glands on one side were enlarged; there was some stomatitis, and the temperature was 102° F. On the 4th Mr. Rose was informed that "marks" were coming out over the old vaccination sites. On the 5th he saw the patient and found the temperature to be 101·4° F. There were exudation on the left tonsil and a scarlatiniform eruption over the chest and the back. A younger child was also ill with an injected throat, vomiting, and a scarlatiniform eruption. The diagnosis of scarlet fever was made. On inquiry of the mother the following history of the vaccination spots was elicited. On Jan. 31st, the day on which the child was first taken ill, a dry sore was observed on the left arm at the site of the original vaccination; the mother was quite sure that no marks were previously visible. On Feb. 2nd three fresh red places with a scab over them were observed. On the 5th Mr. Rose found that there were four spots on the left arm at the usual site of vaccination; they were all of about the same size as a vaccination lesion, and each of them was surrounded by a small red areola with a thin dry scab in the centre. The appearance was exactly that of mild vaccination at about the seventh day.

I saw the patient on Feb. 7th with Mr. Rose and confirmed his observations. The mother was quite certain that the spots were at the site of the old vaccination, and she was sure that the child had not been recently vaccinated and that nothing had occurred before Jan. 31st. On examining the child there was very slight impetigo of the scalp and the skin was clear elsewhere. The appearance of the marks on the arm and their arrangement were quite unlike anything in the way of secondary infection from impetigo. There was no doubt that the child was suffering from scarlet fever, and the only explanation that we could give was that the vaccination had remained latent during two years and had started afresh with the onset of scarlet fever.

Cavendish-place, W.

NOTE ON THE DISCOVERY OF A NEW TRYPANOSOMA.[1]

BY D. BRUCE, M.B., C.M. EDIN., F.R.S.,
LIEUTENANT-COLONEL, ROYAL army MEDICAL CORPS.

I HAVE received from South Africa specimens of blood taken from cattle which contain a new species of trypanosoma. This new species can be at once distinguished from the trypanosomas of surra, of tse-tse fly disease, or of the rat by its larger size, it being almost twice as large as any of the others. In general appearance it conforms closely to the others in possessing an oval protoplasmic body, a longitudinal fin-like membrane, and a single flagellum. This new trypanosoma was lately discovered by Dr. A. Theiler, who is in charge of the bacteriological laboratory of the medical officer of health, Pretoria, Transvaal. He states that at first he was under the impression that he had merely hit against the familiar trypanosoma of tse-tse fly disease. He, however, was struck by its larger size and he tried a few inoculation experiments. He found that the new trypanosoma only infected cattle. Horses, dogs, goats, rabbits, and guinea-pigs were all immune, neither showing symptoms nor the presence of the parasites in the blood. With the same blood he infected two calves, which showed distinct febrile reaction, and at the same time the parasites appeared in the blood. He found the parasite for the first time in the blood of a young ox which had just recovered from an attack of rinderpest, and since then he has successfully inoculated calves from two other cattle. He describes the disease as an acute pernicious anæmia with grave blood changes, a general anæmia without deformation of the elements of the blood, or, lastly, only a slight fever. He also believes that there exists a natural immunity in cattle against this trypanosoma. He is of opinion that this disease is the same as that attributed by Dr. Kolle—who studied rinderpest in South Africa with Koch during the last outbreak—to bovine malaria. Dr. Kolle overlooked the trypanosoma, saw that the disease was infectious, and thought that he observed endoglobular parasites and pigment in the red blood corpuscles.

As this discovery seems to me to be an interesting one, and as Dr. Theiler deserves great credit for the observation, I would propose that this trypanosoma be named after the discoverer *Trypanosoma Theileri*.

[1] A paper read before the Royal Society on Feb. 27th, 1902.

A CASE OF REDUPLICATED CARDIAC IMPULSE AND SOUNDS.

BY JOHN MCCLYMONT, M.D. EDIN.

THE following case illustrates the assistance which the Roentgen rays may afford us in connexion with certain cardiac abnormalities.

A gardener, aged 33 years, with no previous special history, consulted a medical man in regard to an attack of coryza. On examination of the chest the cardiac rhythm and sounds presented such unusual features that the medical man formed the opinion that the heart was diseased. This fact coming to the knowledge of the patient's employer he lost his situation and was next at new work as a coalman in London. He did this laborious work with such obvious impunity and in perfect health that he resolved to have his heart re-examined with the prospect of returning to his former pleasanter occupation and in this way came under my notice. The man presented himself in perfect health and without any cardiac symptoms. There was a double cardiac impulse of regular occurrence in the normal position, the second slighter impulse immediately following on the heels of the first. There was no increase of præcordial dulness. There was a slight impurity of the first sound in the aortic area, and the sounds, like the impulse, were reduplicated. This was specially clear at the apex, the second group being like an echo of the first or louder sounds. There was, however, no reduplication of the pulse. The complete absence of any cardiac symptoms, the lack of either hypertrophy or dilatation of the heart, and the unfailing regularity of the second impulse did not suggest the missed beat of a played-out organ.

Through the kindness of Dr. Betrand Dawson and Mr. Harnack, the superintendent of the radiograph department at the London Hospital, I was able to see the working of this heart on the skiagraph screen. There was the first systole dilating the great blood-vessels and causing the pulse wave and first strong cardiac impulse. The apex remaining all the time in systole, there then occurred a second contraction of muscular fibres, principally or alone at the base of the ventricles. The great blood-vessels were not dilated by this contraction, but it doubtless gave rise to the second cardiac impulse and to the fainter, echo-like heart sounds. This peculiar condition of secondary fibrillar contraction was no doubt due to some irregular innervation of the cardiac muscle and was not of the nature of the missed beat of a failing organ.

Leyton, Essex.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

GERMAN HOSPITAL, DALSTON.

SOME CASES OF ELEPHANTIASIS OF THE EXTERNAL GENITAL ORGANS FOLLOWING THE REMOVAL OF THE INGUINAL GLANDS.

(Under the care of Dr. J. P. ZUM BUSCH.)

ELEPHANTIASIS of the external genital organs not the result of the filaria sanguinis hominis is certainly rare. It is obvious that it may follow any extensive obstruction of the inguinal lymphatics; and that it does not more commonly follow removal of the inguinal glands is probably to be attributed to the fact that it is very rare for all the glands to be removed. The question of treatment is difficult. Some improvement follows removal of much of the hypertrophied tissue, but in many cases as the lymphatic obstruction continues there is a great tendency to a re-formation of the condition. In this connexion a case shown by Mr. R. J. Godlee at the last meeting of the Clinical Society of London is of interest. A man had obstruction of his thoracic duct with consequent dilatation of the inguinal lymphatics. Mr. Godlee, acting on a suggestion of Dr. P. Manson, effected an anastomosis between one of the dilated lymphatics and the saphenous vein, with the result that the dilated lymph-vessels subsided. A similar operation in some forms of elephantiasis of the scrotum and penis might lead to an equally successful result.

CASE 1.—A man, aged 21 years, was admitted into the German Hospital in April, 1893, suffering from soft sores and lymphadenitis in both groins. Whilst the bubo on the left side became smaller and painless, that on the right side showed signs of suppuration and had to be incised. The patient was discharged by the end of May, but was re-admitted shortly afterwards owing to the formation of a fistula on the right side; the glands of the left side had also become re-enlarged and painful. As incisions and scrapings which were undertaken several times did not effect a cure, the whole of the remaining glands (which were swollen and dotted with numerous small abscesses) with the surrounding tissues were removed by two operations in the middle of August. The operations proved lengthy and difficult, but the large vessels were not injured. Both wounds healed by granulation and the patient left the hospital in October apparently quite well. Three months later (January, 1894) he first noticed an occasional œdematous swelling of the prepuce which disappeared on applications of lead lotion. Gradually, however, the œdema recurred more frequently, extended over the penis and scrotum, and became persistent. When the patient presented himself again at the hospital in April, 1894, the scrotum was as big as two fists, the skin being hard and greatly thickened; the penis was about twice its normal size, the prepuce being especially enlarged, and the whole region was in a condition of chronic elephantiasis. In spite of different methods of treatment this condition had remained unchanged up to June, 1901, when Dr. zum Busch had an opportunity of examining the patient for the last time. Surgical interference of any kind was firmly refused.

CASE 2.—A young man, aged 20 years, was admitted into the German Hospital in March, 1896, suffering from double-sided bubo of long standing. The integument of both sides was inflamed and perforated by many fistulæ and the superficial and deep glands of the inguinal and crural regions were enlarged and fixed. Whilst the left bubo was successfully treated by numerous incisions and scrapings that on the right side showed no signs of improvement and was finally removed by an extensive operation as in Case 1. This patient remained well for about four months after his discharge from the hospital when the penis and the scrotum began to swell and gradually assumed a state of chronic elephantiasis. In this case, however, the enlargement was much more severe on the right side than on the left. When last seen, in November, 1898, the condition was rather worse than it had been two years previously.

CASE 3.—A sailor, aged 24 years, was admitted into the German Hospital in November, 1901. Dr. Lauenstein of Hamburg, under whose treatment the patient had been from August to November, 1899, has kindly informed me that the patient was operated on for double-sided bubo and that extensive operations were done on both sides, no large vessels being injured. Not very long after his discharge from the hospital the man noticed a gradually increasing œdema, first of the prepuce only, but later attacking the whole penis and the scrotum. On admission into the German Hospital the scrotum was nearly as large as a cocoanut, the penis was three or four times its normal size, whilst the prepuce hung down from the end of the penis like a balloon. In this case the lymph-stream was not entirely obstructed as by elevation in bed the size of the affected parts could be temporarily diminished; the swelling which remained was like elephantiasis in character and was exceedingly hard. As the patient was very anxious to have something done the prepuce was removed, together with a large piece of integument from the whole length of the penis. As the wound healed well and the patient was very satisfied with the result it was decided to operate in a similar way on the scrotum. Unfortunately, however, the patient developed typhoid fever and he had afterwards to be sent to a convalescent home. He is now on board ship again, but has asked for an operation to be performed on his scrotum after his return in spring.

CASE 4.—This case occurred in private practice and is illustrative of other cases. A married woman, aged 32 years, consulted Dr. zum Busch in May, 1901, and gave the following history. Three years previously she was infected by her husband and suffered from a sore in the vaginal orifice followed by suppuration of the inguinal glands. As far as one could judge from the resulting scars very extensive operations had been done in the United States. About three or four months later she developed erysipelas of the vulva which left a permanent enlargement of the labia majora. There was no fever during the erysipelatous state nor was there any marked increase of the temperature during four recurrent attacks in 1900. Each attack left the external genitals more swollen and harder. On examination in May, 1901, both labia and the clitoris were found to be very much increased in size and very hard; they, as well as the mons Veneris, were in a typical condition of elephantiasis. The patient was advised to have the labia removed by operation, but she refused.

Remarks by Dr. ZUM BUSCH.—This unforeseen and untoward result of the radical treatment of such cases has not been sufficiently recognised either in the text-books or in the special literature of this branch of surgery. Riedel[1] has published notes of two cases and advises surgeons to avoid too extensive operations in inflammatory conditions of the inguinal glands. Of my own numerous cases of clearing out the inguinal region in bubo and cancer I have so far only heard of two having become subject to chronic œdema and elephantiasis (Cases 1 and 2), but I should not be surprised if there were more such cases, as many of my patients probably left England after having been discharged from the hospital.

I may here add one other case in which the elephantiasis occurred in the upper extremity. The patient, a man, aged 24 years, was admitted into the German Hospital in November, 1900, suffering from chronic brawny œdema of the left upper extremity. The arm was enormously swollen and the skin was hard and in many places scaly; the condition was said to have followed an operation for suppurating axillary glands which was undertaken in France two years previously. There was a long scar in the axilla as well as a smaller one above the clavicle. Such an occurrence seems to be very rare, as I have never seen it following Halsted's operation except when the vein had to be tied or when recurrences implicated the vessels, yet it seems important to remember such cases and to be as conservative as possible in the treatment of extensive inflammatory disease of the glands. The recommendation of some surgeons to remove the whole affected area should never be followed except as a last resource in otherwise incurable cases of bubo in which a radical operation is all the more justifiable as the suppuration

[1] Archiv für Klinische Chirurgie, vol. xlvii.

itself will probably destroy all the glands and block up the lymph-channels. In cases of cancer and tuberculosis the surgeon must of course remove the glands with the surrounding tissues as thoroughly as possible; the inconvenience of a chronic œdema weighs light against a possible recurrence.

STATION FAMILY HOSPITAL, RAWAL PINDI.

A CASE OF CARCINOMA OF THE RECTUM; OPERATION.

(Under the care of Captain T. H. GOODWIN, R.A.M.C.)

THE choice between the perineal operation of proctectomy and that introduced by Kraske must depend chiefly on the locality and extent of the malignant growth. If the upper limit of the tumour does not extend beyond three inches or so from the anus the perineal route is far preferable, for the operation is distinctly less severe; inasmuch as in such a case the peritoneal pouch does not need to be opened and the risk of peritonitis is greatly lessened. If, however, the growth involves a portion of the rectum covered by peritoneum Kraske's operation, or some modification of it, is needed for the complete removal of the tumour. In the following case the operation itself was a success, death occurring apparently from a secondary deposit in the brain.

A married woman, aged 59 years, was admitted to the Station Family Hospital, Rawal Pindi, on August 29th, 1901, complaining of continuous pain in the region of the rectum and anus which was much increased by defecation. The family history was unimportant. The patient had always enjoyed good health until three and a half months previously when she had an attack of dysentery accompanied by a good deal of tenesmus. Since that time she had experienced an almost constant desire to defecate, the resulting motions being small and blood-stained. She had suffered from constant very severe pain which was much increased by defecation. On examination per rectum a hard nodular mass could be felt within the anal margin; the growth extended completely around the rectal wall and was in the shape of a signet ring, extending for about two and a quarter inches upwards posteriorly and for about half that distance in front. The sacral glands were apparently not enlarged. The general health was fair. No secondary growths could be discovered. The tip of the forefinger could reach above the mass in every direction and the growth was freely moveable. Excision of the growth was decided on, the patient herself being very anxious to undergo operation. On account of her age and condition Kraske's method of operation was rejected as being too severe and lengthy in performance. She was placed on a nourishing diet and the bowels were kept opened with mild laxatives.

On Sept. 9th, an enema having been previously administered, the patient was placed under chloroform and was put in the lithotomy position. Captain Goodwin then removed the lower three inches of the rectum by the perineal route, the tissues between the rectum and the coccyx being completely divided. The gut was drawn down and was united to the margins of the incision by a few sutures. The hæmorrhage during the operation was extremely free and many vessels required ligature. The vaginal wall was not invaded by the growth. An iodoform and gauze dressing was applied. On examination of the excised growth it appeared to have been completely removed, with a surrounding margin of healthy tissue. A stained section under the microscope proved the growth to be a squamous carcinoma. On the following day the wound was dressed and appeared to be healthy. From the date of operation to Sept. 30th the patient improved steadily; she was quite free from pain and gained in weight and strength considerably. The wound healed well and rapidly around a rectal bougie and the gut showed no tendency to retract. A fortnight after the operation she was able to sit up for the greater part of the day. On Oct. 5th she had regained to a great extent control over the lower bowel, the motions being no longer passed unconsciously. On the 9th the patient, who had been drowsy for some hours, became delirious and the pupils were sluggish in reaction, dilated, and slightly unequal. This condition became gradually worse until the 19th when the patient expired, dyspnœa having existed for two days previously. The cause of death was evidently a secondary growth in the brain, involving the respiratory centre. No necropsy was permitted by the relatives. Examination per rectum revealed no enlarged sacral glands, the wound had healed, and there was no sign of local recurrence.

Remarks by Captain GOODWIN.—The eventual termination of the case was extremely disappointing, as, from the absence of local recurrence, the rapid healing of the wound, and the early control over the fæces, there appeared to be every prospect of a successful result. The chief point of interest in the case appears to me to be that, although no enlargement of the sacral glands could be felt per rectum, yet the probability is that they were involved to a slight degree. Had circumstances permitted of an operation by Kraske's method, with complete extirpation of the glands, I believe that the eventual result of the case would have been successful.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Low Proteid Metabolism.—Proteolytic Enzymes in the Spleen.—Chylous and Chyliform Ascites.—New Urinary Pigments.

A MEETING of the Chemical Section of this society was held on March 5th, Dr. W. D. HALLIBURTON, chairman of the section, being in the chair.

Dr. VAUGHAN HARLEY and Dr. FRANCIS GOODBODY made a communication on cases of Low Proteid Metabolism. It was popularly believed that when large eaters remained thin they did so because a large proportion of the food taken by them passed through the alimentary tract unaltered, and Dr Harley and Dr. Goodbody brought forward these cases to show that this was not always correct. As a matter of fact, certain individuals had a remarkably low metabolism, so that they actually needed less food than other people. Three cases were described in which the patients were kept under similar conditions—namely, in bed and having only massage as exercise. The diet in all cases was carefully analysed and the urine and fæces were examined, the fæces being divided into different periods by means of charcoal. A woman, weighing 72 kilogrammes, was found to be able to live on a very small amount of food—in fact, on one pound of mutton per diem. During the seven days of observation she only lost two kilogrammes in weight and during the first six days only one kilogramme. During this time the quantity of nitrogen taken in the diet was 12·16 grammes per diem, while the average output of nitrogen in the urine was 13·51 grammes, so that she lost from the tissues in the body generally one gramme of nitrogen per diem. During this period of seven days she passed only five motions and the charcoal showed that there was a marked delay in the passage of the fæces along the alimentary canal because the charcoal did not reappear till from 60 to 70 hours after having been given. The quantity of nitrogen in the fæces was extremely small, being only 0·48 gramme, while the fat was 1·09 grammes—amounts corresponding, in fact, to those found in fasting individuals by other observers. On comparing this woman with a man on a diet of one pound of meat per diem it was found that when he was taking 14·72 grammes of nitrogen per diem in his food he excreted in the urine no less than 22·71 grammes, so that whereas the woman lost only one gramme on an average per diem the man, on the other hand, lost no less than seven grammes of nitrogen. During the four days of observation the man lost two kilogrammes in weight; the nitrogen in the fæces was 0·66 gramme and the fat was 2·43 grammes per diem. The woman was now put on a very small diet during two periods of five days each. In the second period of five days she took 6·08 grammes of nitrogen, the diet containing only 4·16 calories per kilogramme. During this time she passed 7·32 grammes of nitrogen per diem in the urine, so that during the five days there was a loss of one gramme of nitrogen per diem from the tissues. During the two periods in which she took this remarkably small diet her average weight was, for the first period 66·8 kilogrammes, and for the second 66·5 kilogrammes, so that the loss in weight was very small indeed.—Dr. F. G. HOPKINS (Cambridge) referred to some experiments which were being made by four or five healthy men at Cambridge weighing from 60 to about 75 kilogrammes, whose daily excretion

of nitrogen was only about six or seven grammes without loss of weight. There could be no question as to the possibility of these men doing work, yet they only metabolised between four and seven grammes (taking the extreme limits) of nitrogen per diem. This ability to work on such an extremely low diet was apparently due to slow and thorough insalivation, which was one of the tenets of the "cult" into which they had formed themselves.—Dr. E. H. STARLING remarked that in using the expression "calories" it must be remembered that fat was included which did not play an active part in metabolism. In this sense fat simply played the part of ballast.—Dr. HALLIBURTON referred to the popular notion that Eastern nations existed on a very low nitrogenous diet; but recent analysis of Chinese dietaries showed a large aggregate of proteids in the fruits and grains. This was especially true of nuts.

Dr. S. G. HEDIN made a communication on the Proteolytic Enzymes in the Spleen of the Ox. Spleen juice pressed from the disintegrated cells of the spleen contained a proteolytic enzyme which acted very strongly in an acid medium, whilst in a neutral or alkaline medium it acted very weakly or not at all. The disintegrated and not pressed spleen-cells contained, in addition to this enzyme, another enzyme that acted upon proteids only in alkaline media. This enzyme seemed to be present in the cells in the form of a zymogen which was not soluble in water, but when exposed to the action of weak alkali or weak acid it yielded an active enzyme soluble in water. As to the purpose of the enzymes, it seemed probable that they had to carry out digestion inside the leucocytes. Intracellular digestion, according to researches mainly carried out in Metchnikoff's laboratory, appeared in most cases to be performed in an acid media, although in some instances it could be performed also in alkaline fluids.

Dr. ROBERT HUTCHISON read a paper on the conditions known respectively as Chylous Ascites and Chyliform Ascites. He stated that in the former of these conditions the opacity of the fluid was due to the presence of fat and the fluid became quite clear on agitation with potash and ether. A specimen of fluid from a case of true chylous ascites was exhibited which exactly resembled milk in appearance and contained 2·3 per cent. of fat. The patient, a man, aged 32 years, exhibited no other symptom and his blood contained no filariæ. The cause of the ascites in this case was obscure. In chyliform ascites, which had only been accurately investigated within recent years, the fluid was less opaque than in the chylous form and often had a greenish tinge. Different observers had ascribed the opalescence to (1) lecithin, (2) mucoid substances, and (3) in a smaller group to a casein-like body. The fluid exhibited was obtained from a man, aged 46 years, who suffered from chronic parenchymatous nephritis and chronic purulent peritonitis. It contained neither lecithin nor mucoid substances, but a proteid which yielded nuclein or paranuclein on digestion, and which was presumably derived from cellular disintegration. The methods of analysis employed were described in detail and a brief bibliography of the conditions was added.

Dr. H. A. SCHÖLBERG read a paper on a hitherto Undescribed Purple Pigment in Urine. This pigment was met with in a patient admitted to St. Bartholomew's Hospital suffering from Peripheral Neuritis under the care of Dr. J. A. Ormerod. The condition was probably congenital and was met with in the patient's father and in another member of the family. The pigment was not due to any drugs taken and it was differentiated from other purple pigments hitherto recognised. The means of its detection were described, and the conclusion arrived at was that it was a purple pigment allied to, though different from, the purple-coloured pigment that produced the deep colour in hæmatoporphyrinuria. When the urine was in large bulk the condition described might resemble alkaptonuria.

Dr. F. H. THIELE read a paper on a Brown Urinary Pigment. The pigment had been found in four patients admitted to University College Hospital. The first was a middle-aged woman suffering from pyorrhœa alveolaris; the second was a woman suffering from parotitis; the third was a child; and the fourth was a woman admitted for sloughing ulceration of the vagina. The pigment was precipitated from solution by ammonium sulphate, lead acetate, and alkaline baryta mixture. It was soluble in alcohol, amylic alcohol, and chloroform, and to a less extent in water. It yielded no spectroscopic band and in concentrated solutions it blotted out the spectrum from the red onwards. An alkaline solution of the pigment in caustic soda did not yield on the addition of calomel the rose-red colour obtained with urobilin. The pigment was very much like urobilin, but differed in several respects. In one case it was worth noting that the patient subsequently had a distinct urobilin band in the urine and besides having a yellowish pigmentation of the skin she had a raw surface on the abdomen the edges of which were green.

Dr. A. E. GARROD remarked on the interest of both of these papers, which bore eloquent testimony to the value of the spectroscope in the recognition of biliary derivatives in the urine. Dr. Schölberg's case appeared to be an individual variation in metabolism.—Dr. H. BATTY SHAW remarked on the interest attaching to the second of Dr. Thiele's cases in which the skin was certainly very yellow, but as there was no bile pigment in the urine possibly the case belonged to the condition which some writers had described as "urobilin jaundice."—Dr. HOPKINS and Dr. GARROD dissented to the use of the term "urobilin jaundice," the latter remarking that there was no evidence that the colouration of the skin was due to urobilin.—Dr. J. R. BRADFORD had seen cases at long and rare intervals in which there was yellowness of the skin, and the urine, though containing no bile pigments, contained large quantities of urobilin.—Dr. HALLIBURTON remarked on the difficulty of the spectroscopic recognition of urobilin.

CLINICAL SOCIETY OF LONDON.

Exhibition of Cases.

A MEETING of this society was held on Feb. 28th, Mr. HOWARD MARSH, the President, being in the chair.

The PRESIDENT showed a man who had sustained a Dislocation of the Semilunar Bone, the displaced bone having been removed by operation. Skiagrams of the case were shown by Mr. Mackenzie Davidson.

Dr. GRAHAM BROWN (introduced by the PRESIDENT) exhibited a new form of Æsthesiometer for estimating the degree of acuteness of tactile sense at different parts of the skin. The instrument consisted essentially of a smooth surface which could be made rough to any desired degree by means of adjustable projections from this surface. It was specially suitable for clinical work in cases in which tactile sensation was impaired and was designed to measure the degree of loss in any given case.

Dr. WILLIAM EWART exhibited a case illustrating the Treatment of Bronchial Dilatation and Bronchial Catarrh by Posture and Respiratory Exercises. Dr. Ewart described the method, which consisted of keeping the foot of the bed raised, sometimes to a considerable height, whilst the shoulders were kept low, only the head resting on the pillow. The first case in which it occurred to him to carry out this indication had been published; others, including some cases of phthisis, had been under treatment. The method, however, had been previously thought of and described by Quincke. The patient exhibited was a man, aged 21 years, who was suffering from bronchiectasis.

Mr. JOHN R. LUNN exhibited cases of (1) Locomotor Ataxy with Disease of the Shoulder-joint in a man, aged about 65 years; (2) Polyarthritis in a man, aged 30 years; and (3) Osteitis Deformans in a man, aged 72 years (with skiagram).—In the discussion which followed reference was made to cases of osteitis deformans in which fracture had occurred, though this was thought to be unusual unless sarcoma was present.—Mr. ANTHONY A. BOWLBY, in discussing the case of polyarthritis, thought that this resembled some cases exhibited on a previous occasion by Dr. Percy Kidd in which bronchiectasis had existed. He (Mr. Bowlby) believed that there was a great deal to learn about polyarthritis, and he suggested that Mr. Lunn's case was due to some form of chronic septic infection by reason of the number of joints involved and the long duration.

Mr. CUTHBERT S. WALLACE exhibited a case of Excision of the Lower End of the Ulna for an old Colles's Fracture. The patient was a man, aged 55 years, who was admitted to hospital in August, 1899, for loss of power in the hand in consequence of a Colles's fracture which he had received some time previously. There was much abduction of the hand and flexion was extremely limited owing to the lower end of the ulna overlapping the carpus. About three-quarters of an inch of the ulna was removed through an incision on the inner side of the wrist. Skiagrams showed the condition before and after operation. The patient could now follow his occupation.

Mr. G. R. TURNER exhibited a man, aged 28 years, from whom he had removed a Sarcomatous Tumour from the Synovial Membrane of the Ankle-joint.—The PRESIDENT remarked that it had only recently been recognised that sarcoma arose in synovial membrane. This subject would form a topic of discussion on a future occasion.

Mr. W. G. SPENCER showed a case of Appendicitis with Secondary Abscess occurring in a man, aged 38 years, in which there had been union by secondary suture of an iliolumbar incision after the evacuation of an abscess which had recurred for the fourth time.

Dr. J. PURVES STEWART (introduced by Mr. W. G. SPENCER) exhibited a case of Paralysis of the Cervical Sympathetic accompanied by photographs showing the distribution of the anidrosis. The patient, a soldier, aged about 26 years, had been wounded 14 months previously by a Mauser bullet which entered the left side of the neck one and a half inches below the mastoid process and came out in the seventh right intercostal space in the posterior axillary line, lodging in his bandolier. The bullet thus passed in front of the vertebral column. He had temporary total paralysis of the right arm which gradually cleared up. There were some hæmoptysis and slight dysphagia for a few days only. Ever since the injury the sight in the right eye had been less acute than in the left, and he had noticed that he did not sweat on the right side of the face, scalp, neck, or upper limb. As regarded the present condition, there were slight weakness of the small muscles of the right hand and an area of slight analgesia along the inner border of the upper arm, forearm, and hand, including one and a half fingers, with a small patch in the axilla. The lower limbs and the left upper extremity were normal. The right pupil was smaller than the left and did not dilate when shaded. Both pupils reacted briskly to light and on convergence. The cilio-spinal reflex was absent on the right side. The right palpebral fissure was narrower than the left and the right eye was slightly sunken. He did not sweat on the right side of the face, scalp, neck, upper part of the thorax, or upper extremity. This area of anidrosis was bounded by the middle line and extended down as far as the third rib in front, and posteriorly as far as the middle of the scapula. The lesion was apparently one of the first dorsal nerve-root on the right side, involving the cervical sympathetic.

Dr. H. D. ROLLESTON and Mr. LAWRENCE JONES exhibited a case of Splenic Anæmia with a Splenic Bruit, occurring in a man, aged 22 years, who had noticed a swelling in his abdomen for four years, increasing in size. There was no history of malaria or syphilis. Two years ago he had an attack of epistaxis, and since then he had repeated attacks of epistaxis, hæmatemesis, and melæna. He had considerable enlargement of the spleen. The blood showed anæmia of what is usually called the chlorotic type. There was apparently no change in the relative numbers of the varieties of leucocytes. There was a distinct blowing continuous murmur to be heard over the spleen, most distinct at the back in the ninth space, just outside the scapular line, and in front, in the ninth space, just posterior to the anterior axillary line.—In the discussion which followed the general opinion was expressed that removal of the spleen constituted a rational treatment of cases of pure splenic anæmia (as distinct from leukæmia), since it resembled a chronic infective process dependent on the spleen.—Dr. ROLLESTON, in reply, referred to Warren's statistics, in which 20 out of 24 patients who were operated upon recovered.

Dr. S. VERE PEARSON and Dr. ROLLESTON showed a case of Idiopathic Muscular Atrophy associated with Peculiar Pigmentation of the Legs. The patient was a man, aged 22 years, who eight years ago had scarlet fever, in the second week of which there were rheumatic pains and swellings in the knees. Weakness in the back was noticed a week later, followed by wasting of the thighs. Pigmentation of the legs had been noticed for one year. He had never taken medicine continuously for more than six weeks and he believed that he had never taken arsenic. There were now atrophy of both thighs and legs and slight foot-drop, talipes equinus, and pes cava. The muscles of the chest and spine were also wasted and there was lordosis. Although most of the muscles showed A.C.C. > K.C.C. there were no other reactions of degeneration. Sensation was normal. The skin of the legs was uniformly reddish-brown. In the discussion which followed it was suggested that the association of an amyotrophic paralysis with pigmentation having this distribution occurred in pellagra, and Dr. Ewart suggested the administration of suprarenal substance in cases of muscular atrophy.

Dr. J. A. ORMEROD exhibited a woman, aged 39 years, presenting an Eruption of a Psoriasis Type but of somewhat uncertain nature.—In the discussion which followed several members expressed the view that it was of syphilitic origin, but Mr. BOWLBY and others could not agree with this, and it was suggested that the case resembled mycosis fungoides in some respects; finally, this case was referred to a subcommittee for further investigation.

Dr. ORMEROD also exhibited a case of Atrophic Paralysis of the Hands and Wrists supervening upon a recurrent generalised paralysis of obscure origin.

Dr. F. E. BATTEN exhibited five children belonging to the same family the subjects of Paralysis allied to the Myopathies and to Friedreich's Disease. The eldest was a girl, aged 15 years, who had always walked slowly and had been weak on her legs, though the calves were apparently hypertrophied. There were foot-drop and pes cavus. The knee-jerks and plantar reflexes were absent; reaction to strong faradic current was also absent. There were slight nystagmus and ataxy; the pupils reacted well. The other children presented many of the same symptoms.

Dr. F. G. PENROSE exhibited a case of Hydromyelia in a boy, aged six years, who presented generalised weakness and generalised loss of sensation to heat and cold.

Dr. C. H. FENNELL (introduced by Dr. ARCHIBALD GARROD) exhibited a case of General Paralysis of the Insane in a girl, aged nine years. No definite history of congenital syphilis could be obtained. The child was mentally bright up to the onset of symptoms six months before.

Mr. RICKMAN J. GODLEE and Dr. PATRICK MANSON exhibited two cases of Filariasis, one of which had been treated by a new operation. The younger of these, a man, aged 21 years, had not been operated upon and presented large fusiform lymphatic tumours in the groins and thighs due to filariæ. The other case was that of a man, aged 31 years, on whom Mr. Godlee had operated, producing an anastomosis between one of the dilated lymphatic vessels and a tributary of the internal saphenous vein. Subsequently another of the dilated lymphatics had been introduced into the spermatic vein. The result of these operations, which had been suggested by Dr. Manson, had been extremely successful.

HARVEIAN SOCIETY OF LONDON.

Exhibition of Cases.

A CLINICAL evening of this society was held on Feb. 20th, Mr. W. WATSON CHEYNE, the President, being in the chair.

Dr. A. WHITFIELD showed a young woman the subject of Psoriasis and said that many such cases were to be seen at present in consequence of the epidemic of small-pox. The patient had suffered from psoriasis at intervals for a number of years, and the present attack came on 14 days after vaccination. The vaccination marks on the left arm were very severely affected, the right arm being more or less clear. The chest and back and knees and shins also showed the condition. She was said to have had eczema since she was quite a child, and he presumed that what was thought to be eczema was really psoriasis. She was otherwise apparently in perfect health and did not complain of anything.—Mr. CAMPBELL WILLIAMS asked whether Dr. Whitfield had tried salicin which was a favourite remedy for the condition, and he had had a good deal of success with it.—Dr. WHITFIELD, in reply, said that he was using creasote, which he had found to be especially useful in acute cases. He had never seen a patient benefit on salicin, though he had tried it in 50 or 60 cases. Arsenic was contra-indicated during the acute stage of the attack. He had no special theory to advance as to the connexion between the vaccination and the eruption. On Feb. 18th he saw a woman, aged 35 years, with an attack of psoriasis which also came on 14 days after vaccination

Dr. A. MORISON showed a boy, aged five years, who was the subject of Congenital Heart Disease. There was an abnormally placed heart, giving a considerable amount of dulness to the right side of the sternum. The second sound was felt by the hand very clearly over the præcordial region and to the right of the sternum. There was a systolic bruit, which gained in intensity towards the pulmonary area and was very loud over the front of the chest. It was also heard over the back, the flanks, and the neck. His belief was that there was pulmonary constriction.—Dr. H. A. CALEY said that he thought there must be pulmonary stenosis in the case, because of the features of the bruit and

the hypertrophy of the right ventricle. There was probably also an incomplete intra-ventricular septum.—Dr. E. CAUTLEY said that the case illustrated a difficult point in diagnosis. Dr. Morison had pointed out the presence of cyanosis and a murmur and had suggested the diagnosis of pulmonary stenosis. On the other hand, there was no thrill, and his own experience was that pulmonary stenosis was much more commonly diagnosed ante mortem than post mortem. The last case of the kind which he had seen was typical. The patient was a child who during life had practically no cyanosis, but had a systolic murmur which could be heard all over the cardiac area and was subsequently found to have atresia of the conus pulmonalis. The orifice was so narrowed that it would only admit a fine probe, and yet there was no cyanosis. There was, in addition, a patent septum ventriculorum. That led to the question as to the cause of cyanosis. In the child he referred to, who was four or five months old, there was extreme atresia of the conus pulmonalis; there was no obstruction in the artery, and none in the valves. It scarcely seemed probable that mixture of blood in the two ventricles could give rise to cyanosis. Therefore he asked why in the present case cyanosis was present. Was it to be ascribed to extreme pulmonary stenosis? If so, why in other cases was there no cyanosis? He, however, was not prepared to suggest any other diagnosis.—Dr. MORISON, in reply, said that he thought the intermixture theory of cyanosis had been largely abandoned, obstructive conditions as the chief cause of the cyanosis holding the ground.

Mr. H. L. BARNARD showed a young woman who was the subject of Bazin's Disease and who had had the ulcers on her legs for the last five years. They appeared first as nodules under the skin and felt somewhat like erythema induratum. Those burst and broke down and formed little round ulcers each of about the size of a shilling, punched out, and extraordinarily like specific ulcers, for which they were often mistaken. They were supposed to be tuberculous, and he regarded the present patient as being tuberculous. She had had tuberculous disease of the spine and of the left ankle, the latter having got well after being put into a plaster-of-Paris case. The ulcers left a pigmented scar which looked extremely like that left by a specific ulcer. Mr. Hutchinson had pointed out that such subjects were singularly predisposed to chilblains. The present patient never had chilblains or enlarged glands in the neck. In a case similar to the present one he endeavoured to find the tubercle bacillus but failed, nor did injection of the substance into guinea-pigs and rabbits produce tuberculosis.—Mr. CAMPBELL WILLIAMS thought that there was no doubt about the diagnosis, but one point about the case was abnormal—namely, its symmetry. In his original description of the disease Bazin said that he had never seen it extend above the knee. That was obviously wrong, because it was not only seen there but might be limited to that region. Recently he saw a woman who had a patch on either knee, on the vastus internus, the lower part of the limb being free. It might occur on the hands. The present case was typical because it had ulcerated. Occasionally resolution occurred without ulceration, leaving a fawn-coloured depression. The lesions were often mistaken for tubercle, but more frequently for syphilis. Tonics, cod-liver oil, and warmth, with antiseptic dressings to keep the part clean, did much good. If the patients could go to a warmer climate they got rapidly well.—Dr. A. EDDOWES said that most of such patients had a good deal of standing, and a fair number of them were washerwomen. Another peculiarity was that the condition was worst in the winter; indeed, it occurred in some cases only in the winter. —Mr. BARNARD, in reply, said that he put the girl upon a good course of iodides and mercury, but the original ulcers got well under treatment by strapping with Scott's dressing. The last crop of lesions had got well under boric acid ointment with bandaging, combined with a tonic.

Mr. BARNARD also showed a girl with an Anomalous Condition of the Hand. She consulted him three or four months ago for what was regarded as an erysipelatous rash. Vesicles came up at night, then burst and left linear marks. The marks were upon the left hand and in a direction from right to left. The case was no doubt of artificial origin. The girl was left-handed.—Mr. CAMPBELL WILLIAMS said that the case was one of dermatitis factitia. No vesicular disease took a linear form. If the patient's hands were tied behind her back for 48 hours the rash would entirely disappear.

Dr. JAMES TAYLOR showed a woman, aged 23 years, who was the subject of Syringomyelia. Five years ago, after bathing, she had what was called a poisoned hand. Apparently there was a gathering at the base of the index finger of the left hand and that was opened. What attracted attention at that time was that although a considerable incision was made she did not seem to find it painful and was complimented by the surgeon on her pluck and composure. The wound did not readily heal. As a matter of fact there was no pluck because she did not feel the incision. Afterwards the hand was contracted and in the few years which elapsed there had been a gradual development of symptoms in the shape of weakness of the left arm, with claw hand and the vaso-motor disturbance, of which evidence could be seen. Frequently bullous sores appeared on the fingers and hand, not, so far as the patient knew, caused by any external application, but probably from hot and irritating things which she could not feel, such as burning. There was wasting of the hand and shoulder, but she said that she could walk fairly well. The knee-jerks were both of them exaggerated; ankle clonus could be elicited on both sides, as well as the extensor plantar response in the left foot. She had very marked anæsthesia to all forms of stimulation over the hand and lower part of the forearm. Higher up in the arm she had a certain degree of thermal anæsthesia and analgesia. Over the trunk there was a similar condition. On the left side of the face she had distinct thermal anæsthesia and marked analgesia on the left side of the forehead. There were marked nystagmus, which was not uncommon in such cases, and lateral curvature of the spine. Apparently until five years ago she was quite well, and Dr. Taylor thought that the condition probably depended upon some inherited peculiarity of the spinal cord which after the age of puberty took on some modification which had resulted in a spread or greater dilatation of the canal and consequent encroachment upon the anterior horn of the left side in the cervical region, and the pressure probably also resulting in some degree of sclerosis in both lateral columns.—Dr. MORISON, the PRESIDENT, Mr. BARNARD, Dr. CAUTLEY, and Dr. D. DALLAWAY took part in the discussion.—Dr. TAYLOR, in reply, said that as the patient had been under his care for only a month he did not know the rate of progression of the disease. It seemed to be extremely slow, as was usually the case. In cases of syringomyelia there were two conditions; first, a cord with a congenital abnormality which took on some slowly progressive change, probably under some condition of stress; and another kind in which it was conceivable that the whole process was one of new growth starting in the way in which new growths did, of which very little was known. He thought that Charcot's disease in such cases was rare. He had seen only one case—namely, in the elbow, which Dr. J. Hughlings Jackson and Dr. James Galloway published in THE LANCET ten years ago.[1] With regard to flushing, no doubt girls subject to the condition had the pretty pink and white complexion shown by the present patient, and he would be inclined to associate that with some vaso-motor disturbance analogous to what was present in the hands of his patient. That was all the more likely in a case in which there was definite evidence of involvement of the fifth nerve.

Dr. EDDOWES showed a man, aged 23 years, who had for nine months found a tendency for his nails to separate, but there was no other indication of disease about him. Slight influenza two years ago was the only illness that he had had for 15 years. There was no indication of psoriasis. The nails had been carefully examined for a fungus or other parasitic cause, but with a negative result.—Dr. PHILLIPS said that he had never seen an exactly similar case, but a somewhat analogous condition had existed in his own person in the great toe-nails of both feet. For many years the inner three-fourths died, and he had to cut that portion away. Underneath was a horny pulpy matter which he also cut away. He suffered from bad circulation, and he attributed it to that, combined with a neurotic origin. Both his hair and his nails were of very slow growth.

Dr. EDDOWES also showed a nurse who presented a Swelling in the Right Forearm which had now existed for three years and appeared to have been aggravated by sewing. Sometimes she complained of a good deal of pain and tenderness.—Dr. BOYD B. JOLL suggested that the condition might be neuroma or neuro-fibroma.—Dr. C. J. N. LONGRIDGE suggested the possibility that it was phantom tumour of the muscle.—The PRESIDENT thought that the tumour was

[1] THE LANCET, Feb. 20th, 1892, p. 408.

muscular. He had seen a similar tumour mistaken for neuro-fibroma.

Dr. H. TILLEY showed a girl, aged 14 years, who had an Aural Exostosis with Extensive Mastoid Disease. He reflected a post-aural flap and gouged out the broad-based exostosis. The antrum was full of inspissated pus which was cleared out and the complete post-aural operation was done. The external wound was sewn up and the packing was done through the meatus. The membranous portion of the meatus was slit up and the flap was made in the usual way. The wound healed at the back by first intention. A fortnight later he reopened the wound and produced a clear surface by scraping away the granulations and putting in a large flap from the inside of the thigh, after the method introduced by Mr. Ballance. The skin graft had taken satisfactorily and the cavity was practically dry. The girl was now able to hear a whisper at a distance of four inches.

Dr. CALEY showed a case of Abdominal Aneurysm involving the aorta and the right common iliac artery. The patient was a man, aged 39 years, who had suffered from syphilis 16 years previously but who gave no history of injury or strain. With prolonged rest in bed, restricted diet, and 20 grains of iodide of potassium three times a day the pulsation much diminished in extent and in degree, the tumour became more solid, and the distension of the veins of the leg almost disappeared.—Mr. BARNARD said that a man at the London Hospital had a superior mesenteric aneurysm. The case had been twice described as an example of cure by different treatments. In the first place it was said to have been cured by gelatin treatment. Then it relapsed and was treated with anti-diphtheritic serum, and was cured under that. Now, three years afterwards, the man was in the London Hospital again, being treated with morphia, and it was suggested that the surgeon might like to resort to the ligature. But the risks of this were too great and the man would not allow a wire to be introduced into the sac.

LIVERPOOL MEDICAL INSTITUTION.

Long Duration of Pregnancy.—Gastric Ulcer.—Appendicitis running an Unusual Course.—Cerebro-spinal Rhinorrhœa.—The Relation of Mental Symptoms to Bodily Disease.

A MEETING of this society was held on Feb. 27th, Mr. RUSHTON PARKER, the President, being in the chair.

Mr. C. THURSTAN HOLLAND read a note on the Duration of Pregnancy, based on a case—that of a young primipara—in which, counting from the last date of normal menstruation to the birth of the child the duration was 340 days, from the date of the last coitus to the birth 323 days, and from the date of the menstruation following the last coitus (an abnormal period only lasting two days) 316 days.—Dr. W. MACFIE CAMPBELL said that he had notes of 64 cases in which the date of impregnation was known, and the average came to 268 days, or rather less than is generally allowed. In one case of seduction 273 days elapsed after one coitus. Nine cases of no menstruation after marriage gave an average of 264 days, and in five cases in which the husbands (sea-faring men) were only at home for one night 277 days. He never had a case similar to that of Mr. Holland, which was open to a little doubt; it was so difficult to be quite sure of the data in these matters. He had, however, notes of six cases ranging from 293 to 303 days, of three cases of 308 days, of one case of 310 days, and of one of 312 days. Mr. Holland's paper was of much interest from a professional and legal point of view, and it showed how important such a question might be.

Dr. R. J. M. BUCHANAN and Mr. R. A. BICKERSTETH brought forward a case of Gastric Ulcer in which a successful operation had been performed for perforation. The patient was a female, aged 27 years, who gave a history of epigastric pain and occasional vomiting extending over a period of two years. 27 hours after the symptoms of perforation came on laparotomy was performed at the Liverpool Royal Infirmary. Much turbid fluid was found in the abdomen, collected in pockets formed by recent adhesions. A perforation near the cardiac end of the stomach was found with some difficulty, and eventually it was closed by passing a rectangular cleft palate needle deeply through the tissues on each side of it. Dr. Buchanan said that on admission to the infirmary the patient did not exhibit any signs of collapse, but rather of reaction, the pulse was of good volume, 120, and steady, her temperature was 100° F., and the respirations were shallow and purely costal. Her face was pallid and somewhat pinched, the expression being indicative of pain and distress; the skin was moist. On examination of the abdomen it was seen to be much distended, the distension being localised to two areas. One, the upper, was bounded by Harrison's furrow above, and the second was a transverse furrow below, about one inch above the umbilicus. Over the epigastric distension the abdomen was tender on palpation and the wall felt somewhat boggy; it was tympanitic on percussion, and on auscultation the heart sounds were heard as if echoed in a gas-containing cavity. The liver dulness was diminished to one inch above the lower costal margin. The lower portion of the abdomen was distinctly stretched and tympanitic. The abdominal walls did not move on respiration. The patient complained of most severe pain in the left hypochondrium and extending towards the base of the left lung behind; it was intensified on deep inspiration, and auscultation revealed a soft friction-sound most marked below the diaphragm. It was not of the usual near and harsh pleuritic character and was considered to be of peritoneal origin and sub-diaphragmatic. It was impossible to locate the ulcer with accuracy, but the localised friction suggested that its position might be at the cardiac end. That such was the case was verified at the operation. Dr. Buchanan said that the points which influenced their decision for operation, even after the long period of 27 hours from perforation, were the symptoms of reaction, the steady pulse, and the rising temperature. The localised distension of the epigastrium pointed to adhesions acting as a safeguard from further leakage. The operation was performed on August 6th, 1901, and the patient left the hospital on Oct. 20th, and had continued well up to the present time.

Dr. W. BLAIR BELL related a case of Appendicitis which had run an unusual course. At the operation he found an empty abscess cavity. The stump of the appendix was ligatured and was removed from the cæcum and the apex from the ileum to which it adhered and where there was a large perforation through which the abscess had discharged into the bowel. He closed the perforation and packed the abscess cavity with gauze soaked in iodoform emulsion. The patient, a girl, aged 16 years, made an uninterrupted recovery.

Mr. C. F. LARKIN read the notes of a case of Cerebro-spinal Rhinorrhœa. The fluid had escaped through a fracture of the basi-sphenoid. The patient lived for 27 days after the fracture and then died from septic meningitis.

The three last cases were discussed by Dr. C. J. MACALISTER, Dr. E. T. DAVIES, Mr. F. T. PAUL, Mr. G. P. NEWBOLT, and the PRESIDENT.

Dr. NATHAN RAW read a paper on the Relation of Mental Symptoms to Bodily Disease. He first of all minutely described the symptoms present in various diseases of the viscera, with special reference to reflected visceral pains, and agreed in the main with the conclusions of Head that they were present in a fair proportion of cases of heart disease, phthisis, and diseases of the stomach and liver. He then described the various mental symptoms occurring in the course of kidney disease, gout, exophthalmic goitre, myxœdema, and chorea, mentioning several cases of temporary insanity which he had noticed. The mental symptoms occurring in the course of typhoid fever, pneumonia, and rheumatic fever he divided into two important groups, those of the initial stage of the fever due to the severity of the infection and characterised by mania and delirium and those supervening on convalescence, chiefly of a depressant and melancholic type. He had often observed post-typhoid insanity of the melancholic type with delusions, and was of the opinion that it was due to nervous exhaustion and insufficient food. In his experience post-typhoid insanity always passed off and the patient's mind was restored to the normal. He had never observed insanity to follow an attack of pneumonia. After a long observation of many thousands of cases Dr. Raw was of opinion that there was a form of temporary mental disorder which occurred as part and parcel of some bodily disease, and which rendered the patient insane for the time, but which rapidly passed away. He was strongly of opinion that these patients should not be certified as lunatics and sent to an asylum, but that they should be treated in a special hospital for mental diseases. He advocated the provision of a reception house or hospital for mental disorders in Liverpool, where patients suffering from delirium tremens and other forms of temporary mental disorder could be sent and specially treated and where

facilities could be given to students for studying this important group of mental disorders; and he was of opinion that such patients should not be subject to the stigma of having been certified as lunatics when a few weeks of special care would restore the mental equilibrium.—Dr. W. B. WARRINGTON mentioned the important observations of Sherrington who found that the emotional life of dogs seemed to be unimpaired after a complete section of the spinal cord below the origin of the phrenic nerves, and also in addition section of one vagus nerve. He also alluded to the innumerable poisons which could be demonstrated in the nerve-cells, and expressed the opinion that these changes had no distinguishing features from one another. He considered that the characteristics of mental disorder in visceral lesions depended rather upon the psychical life of the individual.—Dr. T. R. GLYNN, Dr. W. CARTER, Dr. F. A. GILL, Mr. C. T. STREET, and Dr. J. BARR spoke, and Dr. RAW replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Fractures of the Radius and Femur.—Cultivation of the Tubercle Bacillus.—Exhibition of Specimens.

A MEETING of this section was held on Feb. 21st, Professor E. J. McWEENEY, the President, being in the chair.

Professor E. H. BENNETT presented a cast and a skiagram of a Fracture of the Lower End of the Radius with Displacement of the Lower Fragment Forwards (reversed Colles's fracture, Smith's fracture), and described the details of the injury which had occurred six months before its examination by him; he also discussed the treatment. He then recorded the history of a case of impacted intra-capsular fracture of the neck of the thigh-bone, and presented to the Academy a skiagram which showed very fully the details of the bone lesion—a fracture in which the lower fragment was driven into the upper, and so by the impaction the pieces were fixed in apposition. All surgeons, he said, were now agreed that the non-union of non-impacted intra-capsular fractures was due to want of contact of the fragments and want of rest of the part. In all the specimens which he had seen the lower fragment was impacted in the upper.—Dr. J. KNOTT discussed the case.

The PRESIDENT (the chair being temporarily occupied by Professor BENNETT) demonstrated a case of Tuberculous Pleuro-pericarditis in which the bacilli were unusually numerous, so that cultures made direct on Löffler's serum gave abundant growths of the tubercle bacillus. He exhibited these primary cultures, showing the lichenoid appearance of the colonies and their characteristic tendency to grow on to the glass. Secondary cultures on glycerinated potato were also shown. They were most luxuriant, of a light reddish hue, and the bacilli formed a scum on the dilute glycerine. He also exhibited tertiary cultures on glycerine agar which were succeeding well. On this medium the colonies were whitish. The patient was a man, 55 years of age, who suffered from tuberculous pleurisy on the left side. In the right lung there were nodules of tuberculous broncho-pneumonia, but the pleura was free. The superior pericardial glands were tuberculous, and the parietal layer of the pericardium was much thickened and infiltrated with caseous matter. The spleen was enlarged so as to form a tumour readily palpable during life. It was studded with yellowish necrotic masses larger than miliary tubercles and containing tubercle bacilli in large numbers. In the affected parts of the pericardium the bacilli formed masses large enough to be seen with the low power in the stained preparation.

The SECRETARY read (for Dr. D. F. RAMBAUT) a description of a Case of Congenital Hydronephrosis. The patient was a male who died from pulmonary phthisis. He had shown no symptoms or signs of kidney disease and his urine was free from albumin. The right kidney, which showed the hydronephrotic change, appeared a little larger than the left and weighed five and a half ounces, or half an ounce more than the left. Its capsule was non-adherent, and its cortex appeared normal. Much absorption of the pyramids had taken place. The ureter was not dilated. The left kidney, the bladder, the prostate, and the urethra appeared normal.—The PRESIDENT said that he considered the specimen to be a case of dilatation of the pelvis and calyces of the kidney rather than one of hydronephrosis.

Dr. W. J. THOMPSON read a paper on a Large Abdominal Cyst. The patient was a mechanical engineer, 36 years of age, and was admitted into Jervis-street Hospital on Oct. 9th, 1901. On admission he was thin and emaciated, weighing 10 stones. The upper part of the abdomen was greatly distended. In May, 1900, he first noticed a swelling in the region of the liver and this gradually increased until it attained its present size. He lost flesh rapidly, and shortly before his death, which took place on Dec. 13th, he only weighed eight stones and four pounds. He was frequently urged to allow an operation, but would never consent. The diagnosis arrived at was that it was a huge cyst, and that it was either in connexion with the pancreas or the omentum, or that it was situated in the lesser sac of the peritoneum. At the necropsy a great number of adhesions were found but there was no ascitic fluid. The cyst was very moveable and had the stomach stretched over and adherent to the anterior surface. The pancreas and descending aorta were embedded in its walls. Its circumference measured 32 inches. All the other abdominal organs seemed healthy and there were no enlarged glands.—The PRESIDENT said that the specimen was a good illustration of the rapid growth to an enormous size that pancreatic tumours, or tumours connected with the pancreas, might attain to.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

—An ordinary meeting of this society was held on Feb. 21st, Dr. James Taylor being in the chair.—Mr. J. Jackson Clarke showed a girl, aged nine years, who sustained a Fracture of the Outer Condyle of the Humerus in August, 1901. When seen two weeks after the injury the elbow was rigidly extended, the ulna was dislocated backwards, and the bones of the forearm were dislocated outwards. Under chloroform the elbow-joint was fixed at a right angle. There was now perfect power of pronation and supination, as well as an increasing degree of flexion and extension.—The case was discussed by Mr. Alfred H. Tubby.—Dr. C. O. Hawthorne showed a case of Congenital Spastic Paraplegia in a boy, aged two and three-quarter years. There were crossed-leg progression and heightened tendon phenomena, but no positive evidences of a cerebral lesion. There was no specific disease or family neurosis.—Mr. H. L. Carre-Smith inquired as to the results of ophthalmoscopical examination.—Mr. Tubby was of opinion that the subjects of this affection were never mentally complete.—Dr. G. A. Sutherland regarded the slight strabismus present in the case as confirmatory of a cerebral origin.—Dr. Robert Hutchison was inclined to regard the case as one of Little's disease.—Dr. Taylor thought that syphilis undoubtedly played a part in the causation of the disease, for he had seen some patients with syphilitic choroiditis.—Dr. Hawthorne, in reply, said that the fundus showed no changes and that the family history was not suggestive of syphilis.—Dr. Hawthorne also showed a case of Hypertrophy affecting the right lower limb of a boy. The condition seemed to affect the bones as well as the soft tissues. The tibial arteries were probably enlarged. Hæmorrhagic spots and patches were present on the leg and on the dorsum of the foot. There was no other deformity except a moderate degree of hypospadias.—Dr. A. E. Sansom believed that this was an instance of genuine hypertrophy.—Dr. F. Parkes Weber thought that the spots and patches were distinctly nævoid. The veins and arteries of the limb were much dilated.—Dr. Hawthorne replied.—Mr. Sydney Stephenson showed a girl, aged 11 years, with a Congenital Paralysis of the Oculo-motor Nerve on the Right Side. After discussing the theories of causation he concluded that the condition was due to an absence of, or to functional inactivity of, the nuclei of origin of the nerve.—Dr. Taylor, after mentioning the rarity of such cases, said that he did not know whether any definite lesion had yet been found in the nerve nucleus.—Mr. Carre-Smith asked if there was any evidence of congenital syphilis.—Mr. Stephenson, in reply, stated that there was neither family nor personal evidence of syphilis.—Mr. E. W. Goble exhibited a specimen showing Perforation of a Tuberculous Ulcer of the Small Intestine in a boy, aged six years. The child died from general tuberculosis.—Dr. C. N. Gwynne (Sheffield) remarked that tuberculous nodules in the intestines sometimes existed without causing any symptoms. He had met with such nodules when operating for the radical cure of hernia in children.—Dr. W. C. Chaffey (Brighton) exhibited a specimen of Cirrhosis of the Liver from a girl, aged 10 years.—Dr. W. T. Lister thought that some obscure cases of

cirrhosis of the liver in children might be explained as the result of an acute enteritis.—Dr. Taylor alluded to a case in a girl, aged 15 years, who suffered from choreiform movements associated with cirrhosis of the liver.—Dr. Weber and Dr. Sansom also discussed the specimen.—Dr. George Carpenter showed a case of Paroxysmal Hæmoglobinuria in a boy, aged three years. There was no evidence of syphilis. Application of ice-cold water to the extremities induced an immediate destructive action on the red corpuscles to the extent of 20 per cent., but failed to produce hæmoglobinuria.—Dr. Weber urged the importance of a warm climate in the management of such cases.—Dr. Hawthorne, Dr. Sutherland, and Dr. Taylor discussed the case, and Dr. Carpenter replied.—Dr. Carpenter also showed a case of extreme Ichthyosis in a male infant, aged five months, which developed a few days after birth. The infant had craniotabes and chronic snuffles as well.—Dr. Carpenter also showed a boy, aged eight and a half years, with a large head, probably hydrocephalic, a supposed sequel of basic meningitis during infancy. There were rigidity of the lower extremities and a feeble gait. The enlarged head was not characteristic of hydrocephalus and was somewhat suggestive of hypertrophy of the brain.—Dr. Gwynne described the case of a boy, aged six and a half years, who was admitted to hospital suffering from obstinate constipation and great emaciation. His abdomen was enormously enlarged. As no action of the bowels could be obtained, either by medicine or by injections, left iliac colotomy was performed. The condition was diagnosed as a Congenital Dilatation of the Sigmoid Flexure of the Colon. The result of the operation was satisfactory.—Dr. J. Porter Parkinson read a paper on the Local Treatment of Adenoids. This consisted in the direct application to the naso-pharynx of an astringent compound of equal parts of solution of perchloride of iron and glycerine, applied by means of a curved brush passed behind the soft palate. Dr. Parkinson advised this treatment for soft and gelatinous adenoids which caused temporary recurrent obstruction of the nasal passages and other symptoms, such as cough, headache, aural discharges, and deafness. The method was applicable to patients of any age and could be carried out with a minimum of discomfort.—Dr. Sutherland having spoken, Dr. Parkinson replied.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—An ordinary meeting of this society was held at Liverpool on Feb. 21st, Dr. S. Buckley, the President, being in the chair.—Dr. T. Arthur Helme (Manchester) showed the following specimens. 1. A Carcinoma of the Cervix Uteri with Double Pyosalpinx removed per vaginam from a nullipara, aged 23 years. The patient had been married 12 months. The husband had gonorrhœa a few months before marriage. The symptoms of menorrhagia and discharge had existed for about six months. The points of interest in the case were the early age for cervical cancer, its occurrence in a nullipara, and the association with gonorrhœal pyosalpinx. The growth consisted of columnar carcinoma. 2. A Polypoid Carcinoma of the Corpus Uteri removed by vaginal hysterectomy from a virgin, aged 41 years. The operation was rendered difficult by the smallness of the vagina, and incision of the perineum was required and also median incision of the anterior uterine wall. The ligaments were clamped. The growth was adeno-carcinoma. It originated in the right side of the body of the uterus, forming a large polypoid mass protruding into the vagina. 3. A Solid Ovarian Tumour and Primary (?) Tuberculous Peritonitis with Ascites. Wasting, ill-health, and abdominal enlargement had been noticed for some months previously. There was an evening rise of temperature which was subnormal in the morning. The signs were those of a considerable amount of free fluid in the peritoneal cavity, together with the presence of a solid ovoid tumour in the right ovarian region. The uterus was not enlarged. The history, general condition, and physical signs suggested tuberculous peritonitis rather than simple ascites associated with the tumour. The abdomen was opened and the tumour was removed. It was a fibroma of the right ovary. There was no evidence of malignancy. The whole of the posterior surface of the right broad ligament and uterus was covered with a thick caseous tuberculous-looking material and the pelvic peritoneum generally showed the usual evidences of tuberculous peritonitis. Both Fallopian tubes appeared to be healthy. The ascitic fluid was removed and the abdomen was closed. The patient had completely recovered health at the present date, nine months after operation.—The specimens were discussed by Dr. E. T. Davies and others.—Dr. Lloyd Roberts (Manchester) showed a large Uterine Polypus removed from a married woman, aged 52 years. There was commencing necrosis with offensive discharge and bleeding. The pedicle, which was of about twice the thickness of a thumb, sprang from the posterior uterine wall above the internal os. In addition to the polypus the posterior cervical lip and adjoining vaginal fornix showed superficial ulceration. The appearance of the polypus suggested the possibility of malignancy, but examination failed to reveal such a condition. A further investigation would be made.—Dr. W. Walter (Manchester) showed a Solid Tumour of the Right Ovary removed by abdominal section from a multipara, aged 39 years, whose periods suddenly ceased five years previously. The other ovary was small and atrophied and no ascites was present. At the outer end of the tumour, which was of the size of a small cocoanut, the capsule was very thin and friable, and over a small area the contents were pink and of the consistence of putty. The remainder of the tumour was firm and cut like a pear. Some parts looked like a fibroma, but microscopically the ovarian stroma was found to be extensively infiltrated with round-celled sarcoma.—Dr. H. Briggs (Liverpool), Dr. A. Donald (Manchester), and the President discussed the difficulty of distinguishing benign from malignant connective-tissue tumours of the ovary, and Dr. Walter replied.—Dr. Donald and Dr. W. K. Walls related a case of Spontaneous Rupture of a Uterus Bicornis Unicollis during Pregnancy. The first four confinements had been tedious or instrumental. The fifth occurred in St. Mary's Hospital, Manchester, and was described by Dr. Walls in the society's Transactions for 1899. The present labour commenced with pain and hæmorrhage and the placental edge was felt just within the cervix. The cervix was plugged, but as bleeding returned and pains ceased a leg was brought down under chloroform. The skin of the fœtus was peeling. No progress taking place multiple incisions of the cervix were made and the base of the skull was perforated. The cervix tore, the laceration involving the broad ligament through the peritoneum. On passing the hand to remove the placenta the two horns were found to have separated, the thin intervening tissue having given way. The abdomen was opened and pan-hysterectomy was done. The patient made a good recovery.—Dr. Briggs exhibited: (1) three examples of Solid Ovarian Carcinomata; (2) Necrobiosis of Fibroma of the Ovary; (3) Double Ovarian Cystoma and Pregnancy; and (4) Vaginal Nodules in a case of Adeno-Carcinoma of the Cervix.—Remarks were made by Dr. Donald, Dr. Lloyd Roberts, Dr. Walter, Dr. N. Raw, and Dr. Helme, and Dr. Briggs replied.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 28th, Dr. A. G. Barrs, the President, being in the chair.—Mr. T. Pridgin Teale read a note on the Relief of a Distended Joint by the Establishment of Subcutaneous Leakage. The first case on which this practice was based was one of acute distension of the knee-joint attended by intense pain which he had punctured with a narrow knife expecting to find pus. As the fluid which escaped along the knife-blade was but slightly turbid synovial fluid, instead of opening and draining the joint externally he made three or four punctures with the narrow knife, taking care that the openings into the synovial cavity should be about half an inch in extent. The result was that the fluid escaped from the joint into the tissues outside the joint and was there harmlessly absorbed. There was at once relief to pain and the joint rapidly recovered. Mr. Teale had adopted the same method on several occasions. Mr. J. Hardie of Manchester had written to Mr. Teale that he had adopted this plan several times with relief in early disease of the hip-joint, but had not continued to use it as he became convinced that most of the cases to which it was applicable needed early excision, inasmuch as the disease in the majority of cases began in the subchondral layer of bone and then affected the synovial membrane.—Mr. H. Littlewood and the President took part in the discussion.—Dr. A. L. Whitehead read a paper on the Influence of Nasal and Naso-pharyngeal Obstruction upon the Development of the Teeth and Palate. The conditions giving rise to such obstruction were enumerated and the changes brought about in the shape of the palate and the position of the

teeth were described in detail.—Dr. A. Bronner, Mr. W. E. Margetson, Dr. J. E. Eddison, Mr. Teale, and the President took part in the discussion.—Dr. J. Gordon Sharp read a paper on Some Points in the Action of Digitalis and Strophanthus. He said that of the preparations of digitalis the tincture was the best because it contained a portion of all the active principles. The infusion was not so useful because it contained practically only one active glucoside. The old belief that the tincture did not keep was fallacious, for Dr. Sharp obtained a tincture in the ordinary way of trade and found it physiologically active at the end of 14 months. The active principles, such as digitoxin, digitalin, and digitalein, were not so trustworthy as the tincture or dried leaf in pill form. One advantage of the tincture or dried leaf over an isolated active principle was the combination of active principles whereby overaction was obviated, one active agent neutralising another to a large extent. The slowing of the pulse-rate in the patient taking digitalis was discussed, and it was ascribed to the heart being able to do more work in a given time; hence there was not the need for the heart to beat so fast, and what was lost in number was more than made up in increased contraction force. Within certain limits the nitrites and similar bodies were antidotal to digitalis, and the reverse held good, but it had to be remembered that there was a "difference in time" action, as, for example, sweet spirits of nitre in attaining its maximum action was 96 times more active than digitalis. In ordinary doses he believed that the drug was mainly excreted by the kidneys, and by treating large volumes of the urine of a patient taking digitalis with alcoholised chloroform he was able to obtain an extract which reacted similarly to extract of digitalis, and the same extract when perfused through the blood-vessels of a frog produced contraction and this contraction could be undone by subsequent perfusion of sodium nitrite. Coming to strophanthus, he said that the drug was not so poisonous as was supposed when given by the mouth because it was perhaps rapidly excreted by the kidneys. A woman had been known to take one fluid ounce of the tincture in 24 hours without being any the worse. In its action the drug was not like digitalis. Any action which it had on the heart was that of a heart poison pure and simple, and any diuretic action it had was that of an irritant to the kidneys. Dr. Sharp believed that strophanthus would in time disappear from the present list of cardiac tonics.—Dr. C. M. Chadwick, Dr. Eddison, Dr. D. Sanderson Long, and Dr. Liddell joined in the discussion.—Dr. Bronner showed Picsbergen's Massage Vibration for the Treatment of Some Diseases of the Eyeball.—Dr. Maule Smith showed a specimen of Tuberculosis of the Kidney of a Cow.—Other specimens were shown by Dr. E. Ward, Dr. J. Allan, Mr. W. Thompson, Mr. H. R. Beale, Mr. S. Walker, Mr. Whitehead, Mr. W. H. Brown, Dr. T. W. Griffith, Mr. A. W. Mayo Robson, Dr. J. B. Hellier, Mr. B. G. A. Moynihan, and Mr. L. Knaggs.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—The fifth meeting of the session of this society was held on Feb. 26th, Mr. W. B. Holderness, the President, being in the chair.—Dr. H. Sinigar of Leavesden Asylum showed microscopical preparations of Typhoid Bacilli, Diphtheritic Membrane, Pneumococci, Leprosy and Plague Bacilli, Staphylococci, and the Bacilli of Anthrax.—Dr. E. B. Hulbert showed, by permission of Mr. J. R. Lunn, specimens of Desquamated Skin from cases of Epidemic Eczema (Savill's disease).—Mr. T. H. E. Meggs showed photographs of a case of Small-pox which had been recently under his care. The patient was 14½ years of age and had been vaccinated unsuccessfully when a baby. She was again vaccinated five years ago when only one place took.—Dr. G. E. Hale showed a case of Retinitis Pigmentosa. Though not a deaf mute the patient had been very deaf for years. There was considerable limitation of the field of vision, but in spite of this the patient was a good shot.—Dr. C. R. Elgood showed a case of Successful Vaccination in a woman who had had Small-pox.—Dr. Sinigar read a paper entitled, "Results of the Vaccination of 1060 Adults." These results showed the number of vesicles that ensued in the case of primary vaccinations in the case of those once vaccinated, of those twice or three times vaccinated, and in the case of those who had had small-pox. The percentage of successes was recorded and all failures and doubtful results were duly noted. At the outset stress was laid on the want of uniformity in the potency of the different strains of lymph on the market. The paper then dealt more particularly with the clinical aspect of revaccination. Most of the cases presented very little constitutional disturbance and the vesicles ran a perfectly normal course, but in a certain proportion of cases the following were noted: papules from dressing irritation in 24 cases, pustules spreading beyond the vaccinated area in six cases, boils in 21 cases, carbuncle in one case, abscesses in four cases, reappearance of old skin trouble in one case, eczema in three cases, herpes in one case, erythemas in 23 cases, auto-inoculation in five cases, and generalised vaccinia in one case. The high percentage of successes among patients who had previously had small-pox was noted and conclusions were drawn. After describing a staphylococcus which had been grown from the lymph used, the paper concluded with an expression of the hope that the specific agent of vaccinia might soon be discovered, so that a standardised lymph and one free from extraneous organisms might then be used.—Dr. E. S. Norris (Eton) read a paper entitled, "1000 Cases of Vaccination and Revaccination." The paper commenced with an account of the small-pox epidemic of 1876–77, as witnessed by Dr. Norris at the Homerton Fever Hospital. The conclusions arrived at as to the effects of vaccination and revaccination were in the main that neither operation prevented an attack of small-pox in every case, though each did so in very many cases. Tables were next given showing the incidence of small-pox in the vaccinated and unvaccinated respectively, the general agreement of the experience of Dr. Norris with that of other observers being especially shown in the heavy mortality among unvaccinated infants. The value of good marks as distinguished from bad ones was next dealt with, this value being much more manifest after puberty, for in very early life it would appear that almost any kind of vaccination might suffice to obviate the worst effects of small-pox. The question whether vaccinia and variola could run their course together was gone into, several cases of interest being quoted. The paper ended with an allusion to the very high protective influence exerted by revaccination—a fact admitted by all observers.—Mr. J. Brickwell, Mr. J. H. Tomlinson, Mr. T. H. E. Meggs, Dr. Hale, Dr. W. A. Ellison, Mr. E. W. Adams, and the President spoke on the subject matter of the papers, and the discussion, on the motion of Dr. Ellison, was adjourned to the next meeting.

DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held on Feb. 26th, Dr. A. J. Harrison, the President, being in the chair.—The President announced that Dr. Unna of Hamburg had most kindly accepted the invitation of the council to give the oration at the annual meeting on May 22nd.—Dr. J. H. Stowers then showed (1) a case of Lichen Planus; (2) a boy with extensive Alopecia and severe Vesicating Erythema of the Hands; and (3) a girl suffering from Favus. The last patient was born, and had lived all her life, in London. The origin of the condition could not be traced. Microscopical preparations of the fungus were exhibited.—Mr. George Pernet showed a case of Trophic Disorder of the Nails. He sought for an explanation of the disorder in some toxæmic state induced by carious teeth.—Dr. Alfred Eddowes showed a case of Calcification of Follicular Plugs found in Acne-like Papules on the Legs. The man, a painter, aged 70 years, had tophi on both ears and this led the members present to consider the salt found to be urate of soda. Microscopical sections of a papule were shown.—Dr. E. G. Graham Little showed the following cases: 1. Keratoderma Symmetrica of six months' duration in a woman. Dr. Little would not definitely exclude syphilis, but he believed the case not to be syphilitic. He suggested the possibility of arsenic, taken in beer, as a cause. He drew attention to the fact that the disease was preceded by tingling of the legs. 2. Lupus Vulgaris in a little girl, one of whose eyes had been completely destroyed by old phlyctenular ulceration. 3. Lichen Scrofulosorum in a boy.—Mr. Arthur Shillitoe showed (1) a case of Extensive Gummatous Infiltration of the Thoracic Wall in a man who contracted syphilis 30 years ago and had never since been free from some manifestation of the disease; and (2) a case of General Scaling Papular Syphilide.—Dr. Wilfrid B. Warde showed (1) a case of Lupus Erythematosus; and (2) a case of Erythema Induratum.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 18th, Dr. R. Honeyburne being in the chair.—A general discussion was held on Typhoid Fever, the public health aspect of the disease being introduced by Dr. Arnold Evans, its pathology

and diagnosis by Dr. F. W. Eurich, and its treatment and complications by Dr. H. J. Campbell.—Dr. Evans said that in Bradford during the years 1897 to 1900 cases arose in 934 houses; of these houses 737 were furnished with midden closets and the remainder with water-closets or "tipplers." He exhibited a Pettenkofer's chart for the town of Munich in which the height of the subsoil water and the prevalence of typhoid fever were represented. He expressed the opinion that Pettenkofer's theory was not proved, but that the diminution of typhoid fever in Munich was due to the general improvement in the sanitary conditions of the place.—Dr. Eurich dealt with the bacteriological diagnosis of typhoid fever. After describing the characters of the bacillus typhosus, cultural and morphological, he concluded that the direct bacteriological test was impracticable for diagnostic purposes. He alluded to the direct examination of the splenic blood obtained by aspiration and condemned it as dangerous and uncertain. Widal's test was described, but it was pointed out that trustworthy results could be obtained only if a proper proportion of serum to bouillon culture were present. This proportion was stated to be about 1 to 40.—Dr. Campbell, speaking of treatment, said that up to the present no very satisfactory result had been obtained from treatment by antitoxic sera. In regard to the treatment by drugs, they were to be divided into three classes: (1) intestinal antiseptics; (2) cardiac and respiratory stimulants; and (3) antipyretics. He condemned the use of antipyretics except on very rare occasions. The second class of drugs must be used in general indications. He considered that strychnine should be used only in large doses and for a short time in cases of collapse. Digitalis might be useful in small doses, both for its diuretic effect and also for its action on the heart muscle. He thought that alcohol would be required in most cases, but should not be given as a routine practice. Cases treated systematically by baths showed a lower percentage mortality than others, but the bath treatment could only be carried out satisfactorily in hospitals, or at any rate where plenty of assistants were available. In regard to diet a decided opinion was expressed in favour of milk as the staple diet for typhoid fever patients.—Dr. Dunn related some of his experiences with the troops in South Africa. He said that in 30 per cent. of the cases there was no eruption of the skin. Milk was not usually available, except sweetened condensed milk which the men disliked. They had pulped bread, thin bread-and-butter, and beef-tea. In 10 days or less from the time that the temperature was normal the men often had to shift pretty much for themselves and were fed on ordinary diet of bread or biscuit, jam, and corned beef. He said that relapses were infrequent and deaths from perforation were uncommon.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 19th, Dr. E. C. Kingdon, the President, being in the chair.—Dr. C. B. Taylor showed two cases of Recent Extraction for Double Cataract.—Dr. H. Poole Berry read a paper on the Importance of the Attempt at the Diagnosis of Common Functional Disorders.—The President, Dr. W. B. Ransom, Mr. T. Geraty, Dr. F. H. Jacob, and Miss S. Gray discussed the subject, and Dr. Berry replied.—Dr. Jacob read a short paper on the Diagnosis and Treatment of Empyema. Bronchiectasis at the base of the lung, subphrenic abscess, and pyopericardium might be mistaken for empyema, and withdrawal of pus by means of a needle of large calibre was necessary for diagnosis; examination of pus was valuable—thick creamy pus showing pneumococci, thin pus streptococci, and putrid pus the possibility of subphrenic abscess. As regards treatment, aspiration alone was not trustworthy, though it was sufficient in some cases; removal of a piece of the ninth rib just outside the angle of the scapula and free drainage he had found most successful. Tuberculous cases never did well if opened and drained, as they became infected by other organisms and death was thereby hastened. The value of treatment by means of irrigation and baths of a weak solution of boric acid were instanced; also Estlander's operation in chronic cases.—The subject was discussed by the President, Dr. Ransom, Dr. W. E. Tresidder, and Mr. R. G. Hogarth, and Dr. Jacob replied.

HEALTH OF BUDLEIGH SALTERTON.—Mr. C. Beesley, the medical officer of health of Budleigh Salterton, states that during 1901, on an estimated population of 1883, the death-rate was equal to 18 per 1000, but more than half of these deaths occurred in persons over 65 years of age. The birth-rate was extremely low, being 12·2 per 1000.

Reviews and Notices of Books.

Lessons on Diseases of the Nervous System, 1898–99. By Professor F. RAYMOND of the Salpêtrière Hospital, Paris. Fifth Series. Paris: Octave Doin. 678 pages. Price 16 francs.

THIS volume, which is accompanied by some coloured plates illustrative of various degrees of changes of sensibility with regard to heat, cold, and touch, shows the same degree of analytical subtlety in diagnosis and of general acquaintance with the views of authorities on the various subjects that we noted in a review of the fourth series of lectures.[1]

There are 32 discourses, of which eight are devoted to the question of epilepsy in its sensory and psychical relations, and there are some chapters describing modifications of insular sclerosis, hysterical deafness for words, cases of scleroderma, troubles of sensibility in syringomyelia and insular sclerosis, and two examples of amyotrophic lateral sclerosis. In Chapter VI. there is an interesting and comprehensive *résumé* of our knowledge concerning the topography of the cortical centres for general sensibility, from which it seems that whilst the doctrine of motor localisations in the area of the Rolandic zone appears to be impregnable, the same cannot be said of the centres for general sensibility. Discussing the method of Flechsig the author says that the Rolandic zone is the first territory of grey matter which enters into centripetal connexion with the periphery. Towards the end of intra-uterine life a second system of sensory fibres connects the optic thalamus with the convolution of the corpus callosum. After birth a third system of sensory fibres spreads out in the three frontal convolutions and in that of the corpus callosum, but especially in the foot of the third frontal convolution. The tactile sphere of Flechsig must not be confounded with that of general sensibility which occupies an area greater than the Rolandic but the precise limits of which we do not yet know.

One of the most interesting chapters is on three cases of scleroderma. Professor Raymond says that though at first sight this affection would appear to belong exclusively to dermatology, yet when viewed fundamentally it betrays its neuropathic origin, resembling the tropho-neuroses. The proof of this position is furnished by the nature of the pre-sclerodermic manifestations and by the order of distribution of the foci of thickening which are often symmetrical, or placed along the course of a nerve, or segmentary as if from a lesion of the radicles of a spinal nerve. Again, scleroderma is generally found in people whose personal or family antecedents show a predisposition to nervous affections, and it is also associated with other affections of a neuropathic character—e.g., hemiatrophy of the face, a complaint which often results from a central trophic neurosis. It may also be associated with exophthalmic goitre, or with tabes or infantile paralysis. There is, however, one capital objection to make against this view of the origin of scleroderma—viz., that up to the present time not any constant material alterations have been found in the nervous system, and nothing has been detected in the seat of the cutaneous alterations, in the great sympathetic, in the spinal ganglia, or in the roots of the nerves. The conclusion arrived at is that although it is a disease of the nervous system, yet its true nature and seat are not settled. Quite recently Leredde and Thomas have maintained that the lesions of the skin in the slow and extensive form of scleroderma are due to a toxic agency, but this is merely a theory, and Professor Raymond prefers to believe that a trophic neurosis is more acceptable.

Chapter XXXII. is devoted to a very complete and

[1] THE LANCET, Feb. 22nd, 1902, p. 525.

interesting example of hysterical word-deafness in a young girl who could hear all the noises going on around her but could not understand the meaning of words which were addressed to her. The lecturer impresses this fundamental notion—that there is no more one aphasia than there is one language, but that there are as many varieties of it as there are different modes of communicating ideas, and he points out that there are aphasias of transmission, or the mode by which we communicate our ideas to others, and aphasias of perception, or the mode in which we receive ideas of communication from others. Aphemia and agraphia belong to the first order and word-deafness is included in the second order. It is pointed out that aphasia is sometimes a consequence of uræmia, and it is shown how emotion may produce both deafness and blindness. In his concluding remarks we note that these hysterical aphasias habitually reflect that tendency to dissociation which is seen in other manifestations of like character, notably hysterical anæsthesias. As a rule hysterical aphasia assumes the clothing of hysterical mutism which is a pure motor aphasia, but it may take on the form of pure word-deafness or be associated with agraphia, and the duration of the disorder varies in one case or another, being long or short.

The other essays are equally characterised by minute analysis and learning, with due acknowledgment of the work done by others, and though the subjects are scientifically handled they are expressed in a very easy and readable form.

Syphilis and other Venereal Diseases. By H. DE MÉRIC, M.R.C.S. Eng., Surgeon to the French Hospital, London. London: Baillière, Tindall, and Cox. 1901. Pp. 132. Price 5*s*.

THIS little volume may be considered a brief practical account of the diagnosis and treatment of syphilis and the other diseases which are allied to it etiologically. It is not, and does not claim to be, an exhaustive treatise on the subject, but its very brevity will commend it to many practitioners who would be disinclined to peruse a larger work. We have spoken of the volume as practical, and its practical character is that for which we would chiefly commend it. We may not in all cases agree with the views set forth by the author, but they are evidently founded on a large experience of these diseases.

In the chapter on the Diagnosis of the Primary Syphilitic Sore from a "Simple Venereal Sore" Mr. de Méric rightly points out that it is less dangerous to mistake a syphilitic for a soft chancre than a soft for a syphilitic sore. In the former case the anti-syphilitic treatment will be merely postponed, while in the latter many months of needless mercurial treatment will have been carried out. The author in his account of the treatment of gonorrhœa prefers the local treatment by injections to the administration of drugs by the mouth, though if the local treatment does not produce a very marked improvement in a week or 10 days he commences internal treatment.

A chapter is devoted to the Prophylaxis of Syphilis and an interesting account is given of attempts at prophylactic and curative "syphilisation."

Nursing; General, Medical, and Surgical, with an Appendix on Sick-room Cookery. By WILFRED J. HADLEY, M.D. Durh., F.R.C.P. Lond., F.R.C.S. Eng., Physician and Pathologist to the London Hospital; Lecturer to Nurses at the London Hospital Nursing School; Assistant Physician to the Chest Hospital, Victoria Park. London: J. and A. Churchill. 1902. Pp. 326. Price 3*s*. 6*d*.

THE modern English nurse has certainly very great advantages over her predecessors of some years ago. The training which she has to undergo is thorough and practical. There is a danger, however, of her becoming a mere machine, and to guard against such a possibility at most of the training schools for nurses lectures are given by medical men, not only on elementary physiology and anatomy, but also on such points in medicine and surgery as a nurse should know in order to take an intelligent interest in her work and to render her reports to the practitioner of substantial value. A "doctor" nurse is, of course, an objectionable being, and the lecturer has consequently to use great care and discrimination in dealing with his subject so as to say sufficient to guide the nurses without imbuing them with the idea that they can act for the practitioner in his absence. In the book now before us Dr. Hadley has been successful in steering the desired middle course, and nurses will find much that will be of great use to them in their daily duties. Occasionally, however, we consider that he has erred. For instance, his remarks on the Weir Mitchell treatment are quite inadequate, whilst we doubt whether a nurse should be entrusted with the difficult task of giving medicines through the nose by means of a catheter passed into the œsophagus. On the whole, however, we can recommend Dr. Hadley's book to those nurses who are desirous of maintaining, or adding to, their knowledge in the various branches of the nursing art.

Analytical Records
FROM
THE LANCET LABORATORY.

STERILISED MILK (SNIP BRAND).

("VACCA, LTD.," HOLLAND; LONDON AGENCY, C. DREYER AND CO., THAMES CHAMBERS, BEER-LANE, E.C.)

AN admitted drawback to milk sterilised by heat is the flavour of having been scalded which invariably results. Whatever method of sterilisation has been adopted for "vacca" milk it is certainly quite free from this "boiled" flavour. Its taste can hardly be distinguished from good, fresh raw milk. Yet, as our experiments have shown, the milk is quite sterile and keeps indefinitely in bottle. All attempts to produce decomposition or undesirable changes on exposing the milk for several days to the temperature of incubation failed. Further, the milk kept sweet for several days after the stopper of the bottle had been removed—a fact which might suggest the employment of an added antiseptic. But Dr. Klein has shown that when specimens of this milk were inoculated with bacillus coli it yielded "copious growth and typical changes." Cultivations made with the milk on agar plates and other nutrient media were found to be free from any growth after several days' incubation. In regard to the quality of the milk the following analysis of a sample submitted to us shows that it is well above the minimum limitations now prescribed by English law: total solids, 11·86 per cent.; fat, 3·20 per cent.; non-fatty solids, 8·66 per cent.; and mineral matter, 0·69 per cent. The following analysis made of a sample taken by ourselves independently from a stock just landed from Holland shows that the excellent quality of the milk is uniform: total solids, 12·38 per cent.; fat, 3·49 per cent.; non-fatty solids, 8·89 per cent.; and mineral matter, 0·68 per cent. As will be seen, it is a full-cream milk. The sterilising process is conducted in Holland under scientific supervision. Certain of the samples which we examined were quite a month old and the condition of them all was satisfactory, the most remarkable feature being the entire absence of "boiled" flavour. We could find no preservatives. The milk is retailed at 4*d*. per litre (that is, nearly an English quart). It is the first time that we have met with

sterilised milk giving absolutely no evidence to the taste of having undergone a sterilising process.

LECITHINE PREPARATIONS (CLIN) AND THE CACODYLATES (CLIN).

(F. COMAR AND SON, 64, HOLBORN-VIADUCT, LONDON, E.C.)

It is well known that lecithine is a phosphorised organic constituent found in nervous tissues, in egg yelk, and in the soft roe of fishes, while it is undoubtedly one of the phosphorised principles of the brain. It is a glycero-phosphoric acid in which two stearyl groups replace two hydroxyls, and distearyl-glycero-phosphoric acid combined with choline is lecithine, a yellowish-white, waxy solid, yielding on decomposition glycero-phosphoric acid, stearic acid, and choline. Lecithine has a very favourable influence on metabolism. It is a natural glycero-phosphate and is stated to increase the appetite and to effect a notable augmentation of weight in patients suffering from tuberculosis or anæmia. M. Lancereaux regards it as an excellent food, rendering great service in cases of rapid denutrition. In the preparations before us, consisting of pills of pure lecithine, granulated lecithine, and solution of lecithine, the lecithine was extracted from eggs by a carefully conducted process. The pills contain each 0·05 gramme of lecithine. The same quantity is contained in a teaspoonful of the granular preparation and the same quantity again in the hypodermic solution. The use of lecithine would appear to be a distinct advance therapeutically on the administration of chemically prepared glycero-phosphates. From the same firm we have received specimens of cacodylate preparations (Clin). The preparation of iron called "marsyle Clin" is worthy of notice in particular. It is a true compound of ferrous iron with cacodylic acid. It is reported to have given excellent results in those pathological conditions, such as anæmia or chlorosis, for which the use of iron or arsenic, or both, is indicated. The globules of marsyle are so made as to pass through the stomach without being dissolved, so that the garlic odour and taste occurring in eructations are said to be avoided. This interesting compound of arsenic and of iron, the former an adjunct to the latter, may also be had in the form of "drops" or in solution for injection. These Clin preparations are of distinct therapeutic merit.

SCOTCH WHISKY, THE ALL MALT BRAND (A.M.B). No. 1 AND No. 2.

(P. MACKENZIE AND CO., LIMITED, 69, SOUTH JOHN-STREET, LIVERPOOL.)

On analysis the two samples of whisky submitted to us, each representing a separate vat, presented similar characteristics, as the following figures show. Whisky from vat No. 1: alcohol, by weight 43·14 per cent., by volume 50·72 per cent., equal to proof spirit 88·68 per cent.; extractives, 0·15 per cent.; acidity, recorded as acetic acid, 0·03 per cent. Whisky from vat No. 2: alcohol, by weight 43·71 per cent., by volume 51·32 per cent., equal to proof spirit 89·59 per cent.; acidity, recorded as acetic acid, 0·03 per cent.; extractives, 0·13 per cent. Each whisky possessed a pale colour which is consistent with the low amount of extractives shown in the above analysis. The degree of acidity was so slight as to be negligible. It is stated that this whisky is a pure malt whisky, and there is nothing in these analyses to show the contrary. Moreover, both whiskies possessed a delicate flavour which was decidedly malty, while they are soft rather than harsh to the palate, from which it may be deduced that both also have been duly matured.

SPARKLING MOSELLE NATURAL BRUT.

(M. EISENHARDT AND CO., 20, CLIFFORD-STREET, BOND-STREET, LONDON, W.)

This wine is for all practical purposes sugar-free. Though it shows a reducing action on alkaline copper solution this is comparatively trifling and not entirely due to sugar. It may safely be stated that the sugar is decidedly less than one-fifth per cent. That there are just traces of sugar present is evident from the fact that we obtained characteristic crystals of glucosazone on treating the wine with phenyl-hydrazine in the usual way. Further results of analysis were as follows: alcohol, by weight 10·92 per cent., by volume 13·52 per cent., equal to proof spirit, 20·30 per cent.; extractives, 1·78 per cent.; mineral matter, 0·15 per cent.; volatile acid recorded as acetic acid, 0·01 per cent.; non-volatile acid recorded as tartaric acid, 0·36 per cent. The wine possesses a delicate flavour and it is attractive and agreeably sparkling. We have very seldom examined a sparkling wine so free from sugar as this is, and it may therefore be recommended to those who are forbidden sugar-containing wines.

WAND'S PILLS, PERLES, CAPSULES, AND TABLETS.

(MR. S. WAND, HAYMARKET, LEICESTER.)

We have received types of the products of this firm illustrating the improvements which the latest machinery effects in regard to the making of pills, capsules, perles, &c. We have put some of these to the test and find that the contents are as described, while each particular form of medicament yields readily to the dissolving action of water or dilute acids or alkalies. The gelatin-coated pills and granules, oval in shape, are perhaps worthy of special remark. They keep well, are soft, and are readily swallowed; they are said to be free from pinholes—a statement certainly true of the specimens sent to us. The specimens included phenacetin tablets, compound sulphur tablets, capsules, oval gelatin-coated pills, and pearl-coated pills containing the Blaud iron mass, and varnished aperient pills and santal perles.

(1) ALGINOID OF IRON; AND (2) THYROGLANDIN.

(EVANS, LESCHER, AND WEBB, 60, BARTHOLOMEW-CLOSE, LONDON, E.C.)

Alginoid of iron is a compound of alginic acid and iron, the former being derived from the gelatinous substance prepared from algæ. Alginic acid appears to form definite metallic salts; that of iron is known as ferric alginate and contains 10·97 per cent. of iron. It is said to be unaffected by the gastric digestion and to pass the stomach unchanged and to be without astringent effect on the bowels, and is laxative rather than constipating. This curious iron compound may be obtained in the form of pills, pellets, or powder, and has been administered, it is said, with good results in anæmia and chlorosis. Thyroglandin occurs in the form of powder, which is said to contain all the active principles of the thyroid gland of the sheep and to be four times the strength of the fresh gland. It is prepared under a patented process and is said to be of uniform strength and quality.

HOVIS FOOD FOR INFANTS AND INVALIDS (No. 1 AND o. 2).

(HOVIS BREAD FLOUR CO., LIMITED, MACCLESFIELD.)

The advantages of these foods are that they are almost entirely soluble and that by the addition of them to diluted cow's milk a milk is obtained presenting the same composition as human milk. The method of their preparation necessarily involves their sterilisation. The composition of Food No. 1, according to our analysis, was as follows: moisture, 3·25 per cent.; mineral matter, 1·60 per cent.; proteids, 6·80 per cent.; malt, sugar, and dextrin, 88·35 per cent. The composition of No. 2 Food (for infants and invalids) was as follows: moisture, 2·45 per cent.; mineral matter, 1·55 per cent.; proteid, 5·67 per cent.; malt, sugar, dextrin, and starch, 90·33 per cent. Food No. 1 is almost entirely soluble in water, while Food No. 2 is not quite as soluble, containing a small proportion of wheat flour and is intended for infants aged eight months and upwards. The proportion of proteids in both foods is comparatively small which, however, is amply compensated for by the fact

that they are to be used as adjuncts to diluted cow's milk. The foods consist largely of digested and transformed carbohydrate which is a valuable constituent so far as the needs of infant feeding are concerned. It is very correctly claimed that these foods are not complete in themselves, but that their addition to milk affords a diet lacking no physiological requirement.

KETO METAL POLISH.

(THE KETO MANUFACTURING COMPANY, SMITHFIELD-STREET, LIVERPOOL.)

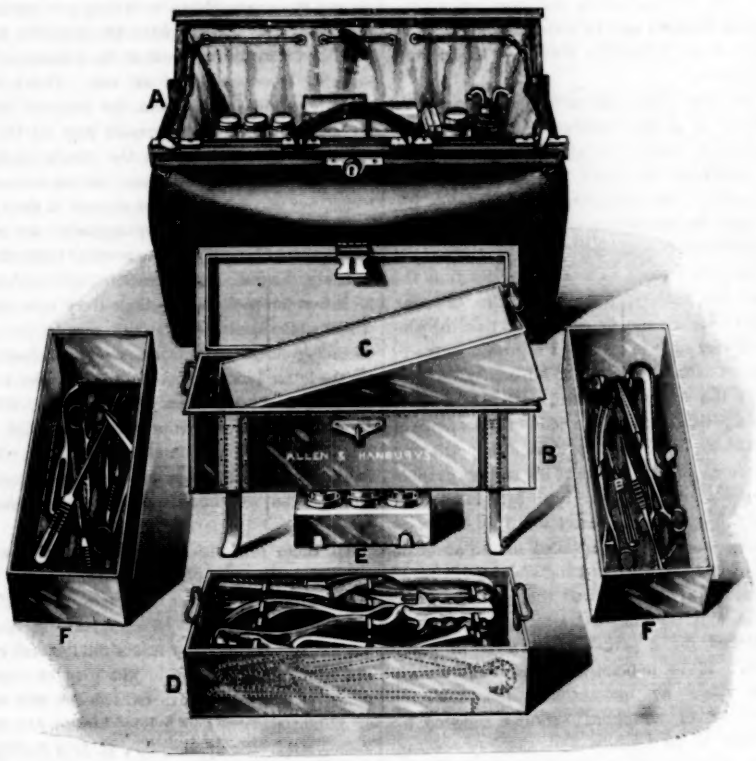
While, as we found, this preparation is an excellent metal polish, it possesses no striking novelty in regard to composition. Moistened tobacco ash is one of the best metal polishes that we know. Keto somewhat resembles it in containing finely powdered chalk and an alkaline carbonate. It is a pink turbid fluid.

New Inventions.

A COMPLETE OBSTETRIC AND GYNÆCOLOGICAL OUTFIT.

I HAD long been impressed with the necessity of a complete outfit adequate to meet the needs of any obstetric or gynæcological emergency, but nothing in instrument-makers' catalogues seemed to at all meet the requirements. The obstetric outfits usually described made no provision for those cases requiring abdominal section, whilst the provision for simpler cases appeared to be very inadequate. Yet the necessity of an adequate outfit is obvious. For instance, I was summoned to an obstetric case in which abdominal section was urgently indicated, but the telegram which I received gave me no indication of such a possibility and but for the fact that I brought with me the outfit to be described the patient would probably have died. In designing this my object was to be possessed of such an arrangement that, given any obstetric or gynæcological complication, I should at once be in a position to deal with it. The outfit has had a practical test extending over nearly 12 months and has stood the test very well. With the contents of this bag and without anything else I have performed various abdominal sections besides operations of a minor character. I append a description of the bag with illustration.

The outfit consists of a surgeon's kit-shape bag, strongly made in durable cowhide, opening square at the top, and fitted with removeable aseptic lining with a convenient series of pockets and adjustable loops for bottles, dilators, scalpel cases, chloroform apparatus, &c. (A). At the bottom of the bag are fitted a pair of aseptic metal trays (F, F), one fitting over the other and forming a box. Both of these trays when open become useful carbolising trays for instruments, &c., and when closed up are used for carrying instruments, dressings, &c. On the top of these trays is placed a specially designed portable combined steriliser and instrument case (B, C, D). B, the steriliser, is fitted with hinged lid and moveable legs. C is a deep inner tray fitting closely inside the steriliser B, and used for carbolising the larger obstetric instruments after sterilising. D is the instrument frame with metal rack into which is conveniently fitted a complete set of obstetric instruments. This in turn fits closely inside the carbolising tray C. E is an improved double-wick Schimmelbusch's safety spirit lamp. The bag as fitted is, of course, adapted to special needs, but the scheme is easily adaptable to individual requirements and I therefore describe it as I think it will be useful to others. Credit is due to Messrs. Allen and Hanburys for the way in which they have carried out the design.



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THE LANCET.

LONDON: SATURDAY, MARCH 8, 1902.

The Subjugation of Small-pox.

IT may be useful to review briefly the chief measures which are being taken in the metropolis to keep the prevailing epidemic of small-pox within bounds. It is now seven months since the disease was introduced, and what at first seemed likely to be a localised outbreak has spread over the whole of London, whence the disease has been imported into many outlying districts in the provinces. As regards London, at the present time, except in certain parts of the East-end, cases are but thinly distributed, but their existence demands unceasing vigilance lest any one of the invaded areas should become the centre of widespread contagion. The measures adopted to control this spread are based on principles which, with one important exception, are applicable to all infectious diseases, and in none do we meet with better illustration of the difficulties that have to be overcome to ensure success.

There is, in the first place, the difficulty arising from imperfect diagnosis. It is the "unrecognised" case which so often acts as the first spark in a wide conflagration; and in the case of small-pox the mild and greatly modified attacks common amongst the vaccinated may, and often do, pass unnoticed until the occurrence of secondary and more typical cases reveals their true nature. Secondly, there is the difficulty of securing the prompt removal of the sick from the neighbourhood of the healthy, followed by the thorough disinfection of the dwelling and its contents. That the contagium is given off very early in an attack is proved by scores of instances, and no doubt the degree of infectivity varies in different types of the disease. Indeed, infection may be transmitted from a patient prior to the definite appearance of the characteristic rash, and thus it not seldom happens that in spite of the removal of the patient at the earliest possible moment after notification some who have been in his company may already have become infected. This brings us to a third difficulty, one which is entailed in the adequate supervision of all who have been dwelling under the infected roof. It is not enough to have removed the patient, to have disinfected rooms and clothing, but all "contacts" must be carefully watched for a period of 14 days from the date of removal. It is impracticable and unnecessary for this to be done by quarantining these persons within the house or in a special building assigned for the purpose. That is an irksome and a costly measure quite unsuitable in large communities and only to be resorted to in exceptional circumstances. It is, too, a plan which has often broken down in practice, as, indeed, it did in the very town which claims the credit of having introduced this "system" of control. The futility of such quarantine has been shown in other diseases, but its replacement by the intelligent and continuous supervision of all who have been exposed to the chance of infection is both necessary and possible. The subject has been succinctly treated in a recent circular issued by the Local Government Board. After stating that quarantine is not needed "in districts in which sanitary matters are properly administered and vaccination and revaccination are efficiently carried out," it goes on to say that there is no material advantage to be gained by keeping the other inmates in the house after the removal of the patient. "They are not likely to infect other people, unless they themselves develop small-pox; and all that is required is to keep such persons under medical observation for a fortnight, and particularly to examine them carefully day by day towards the end of the second week from their exposure to infection, in order to ascertain whether any of them are developing small-pox. If none of them do so by the beginning of the third week from exposure, the revaccination (or vaccination) to which they were at once submitted on the occurrence of the first case in the invaded house should secure them from attack by the disease." At the same time the Board recognises that in some circumstances it may be wise to keep such persons confined to their houses under observation. We think, too, that it would be well if in every district there were places to which a "contact" who shows signs of febrile illness within the specified fortnight might be removed forthwith, until it be determined whether he is suffering from small-pox or not. There is also another difficulty which arises from the presence in our midst of the vast contingent of vagrants who fill the casual wards by night and roam through the streets by day. They may not only infect the workhouse, shelter, or common lodging-house, but may scatter germs abroad in their peregrinations. In times of epidemic every applicant for lodging in such places should be subjected to medical inspection. And there is, lastly, the difficulty of providing sufficient and safe accommodation for patients; so that every case may be isolated, whilst at the same time no risk may be run of the hospital becoming itself a focus for the dissemination of disease. On the latter point we would refer to the remarkable facts adduced in THE LANCET of Feb. 22nd (p. 496) by Dr. J. C. THRESH and our comments thereon at p. 534, whilst from an article in our issue of March 1st (p. 612) it will be seen that in the matter of securing sufficient accommodation the Metropolitan Asylums Board is acting with praiseworthy foresight.

All these difficulties are being grappled with by vigorous efforts on the part of health authorities. Chicken-pox is made notifiable, in order that cases of doubtful nature may not pass unnoticed. The ambulance service has been extended and perfected to insure the removal of patients with the least possible delay. The plan of supervising "contacts" is being sedulously carried out, and those in charge of public shelters and lodging-houses are on the alert to detect suspicious applicants. It is a testing time for the health administration of London, and we believe that it is owing largely to the manner in which this organisation is framed and conducted that the present outbreak has so far been kept within comparatively small dimensions. We trust that by such continued vigilance the disease will be kept within manageable limits, but it would be too much to expect its early and entire cessation. The foci are too

widely dispersed to be easily stamped out, and any day a wide extension might arise that would tax all London's sanitary resources.

Yet there is one measure applicable to small-pox, alone amongst common contagious diseases, which, if it could only be thoroughly enforced, would do more than anything else to check the progress of the scourge. By singular perverseness the legislature has placed the control of this measure in other hands than those responsible for the health of the community. In the absence of this powerful adjuvant the efforts of the sanitary service can only be partially successful. The risks of contagion may doubtless be diminished by sanitary improvements involving the better housing of the poor, the diminution of overcrowding, the enforcement of cleanliness, the freer supply of light, air, and water, and the right disposal of refuse, but none of these things, good as they are, go to the root of the matter. Every individual human being carries within himself the soil in which the germs of disease may be implanted. The soil must be made unfit for such noxious growth, and this, in essence, is what vaccination does. It is needful that vaccination should be efficiently performed, and repeated at intervals, and if this be done it is practically certain to avert the disease. What more convincing evidence can be required of the truth of this assertion than that given by the facts recently published of the immunity of those persons employed at the hospitals of the Metropolitan Asylums Board, or, on a smaller scale, the experience of the nurses of the Stepney Infirmary. Yet there must be thousands of persons in London at this present time who have not availed themselves of this priceless prophylactic. Every person has it in his power to render himself safe from attack by small-pox. His neglect to take this step contributes to the persistence of the disease in the community. Therefore, to all the other difficulties in the way of those who are fighting the epidemic must be added this—perhaps the worst—because it is based on individual ignorance and negligence, and against stupidity even the gods strive in vain. The epidemic wave will pass in time, but very much can be done to check its career and to diminish its intensity by the general adoption of a practice of which the efficacy has been proved by the experience of all civilised nations during the century that has elapsed since its introduction.

Electric Shock.

THREE papers of very considerable interest have just been read before the Institution of Electrical Engineers. They deal with the subject of electric shocks, and both the papers themselves and the discussion of them, which is to follow on March 13th, are likely to advance our knowledge of a somewhat difficult subject. Mr. TROTTER'S paper on Electric Shocks at 500 Volts is intended to correct the popular belief that accidental contacts with conductors at such a pressure are inevitably fatal. He showed by actual experiment during the meeting that he could endure the sensations produced by a brief contact with conductors at that pressure, and a milliampère-meter arranged in the circuit gave readings ranging up to 30 milliampères as the current which traversed his body. The sensations, he said, were rather like those produced by touching a heated iron.

It is important to distinguish between the effects of brief accidental contacts with live conductors and those which might follow if the subject were so entangled as to be unable to escape from the position of serving as a conductor for a current at that pressure. 500 volts is a common voltage on circuits used for electric traction. On the Central London Railway the difference of potential between the middle line and the running rails is 500 volts, and the same difference of potential is maintained between the overhead wire and the rails of an electric tramway. In either of these systems, therefore, a passenger might accidentally come into contact with conductors having a difference of pressure of 500 volts, and would receive a shock which might feel very disagreeable, but the probabilities are that he would easily be able to extricate himself from the situation without suffering any material damage. A person falling off the platform at one of the "Tube" stations, for example, is not necessarily grilled alive, even if he should come into contact with the rails. A passenger on the outside of an electric tram-car would be better advised to sit still than to jump off headlong in the event of the overhead wire breaking and falling upon the car.

Mr. TROTTER'S paper and demonstration also emphasised the value of ordinary dry clothing as a protection against such pressures as 500 volts. Using a model section of the tract of the Central London Railway he not only stood upon the rails, but actually sat upon them and lay down upon them in sight of the assembled audience and the galvanometer indicated only a very few milliampères. The conclusions we may draw from his paper are, that it is a risky thing to take a deliberate hold of conductors having a potential difference of 500 volts, but that accidental contacts with them are only likely to give a nasty shock, and that ordinary users of electric railways or tram-lines are in no imminent danger of death from the electric currents.

Mr. F. B. ASPINALL'S paper, which we publish in this issue and which was read at the same meeting, raised many points of medical interest. He submitted to the medical and engineering professions nine very pertinent questions and then proceeded to elucidate them so far as he could from the facts which had come under his own notice. As the Institution of Electrical Engineers has very sensibly invited the attendance at the meeting of several medical men who are known to be interested in electrical matters it is quite likely that they may be able to add their counsels a the adjourned discussion. Mr. ASPINALL suggests that the physiological condition at the time of the shock may be an important factor, and created some amusement by hazarding the suggestion that a man under the influence of alcohol was somewhat protected from fatal effects by his condition. He also asked for information as to the importance of the path taken by the current through the body and for instructions how to resuscitate those apparently killed by electricity, and inquired for a simple and certain test by which to know whether a victim was dead or only in a state of suspended animation. He mentioned several observations which led him to suspect that a person does not feel electric shocks when he is asleep, and he attached great value to D'ARSONVAL'S method of treating by artificial respiration those who were apparently

dead as a result of electric shock. The question of the mode of death by electric shock is not yet fully settled, but there is much to support the view that the heart is the most susceptible of the vital organs and that death from electric shock is very often death from arrest of the heart's beat. We are not yet in a position to say that this is the invariable rule in the fatal cases. In the non-fatal cases, where victims have been resuscitated after being apparently dead for half an hour or more, it is difficult to guess at all closely as to their actual condition. It is quite improbable that the human heart should be able to re-commence to beat if it has once been completely arrested for even 30 seconds, and if the condition were one of arrest of respiration it should be possible to feel the beating of the heart during the critical period which immediately follows the receipt of the shock. In one of the cases recorded by D'ARSONVAL and used as a basis for the rules laid down by him for treating a victim of electric shock in the same way as one apparently drowned the report states that the artificial respiration was not commenced until nearly half an hour had elapsed; and in that case it is difficult to believe that respiration had really been at a standstill for so long a time. Again, Mr. ASPINALL instances a patient who received a shock and was insensible but came round without assistance in 25 minutes. In another, who recovered after 45 minutes of artificial respiration, he tells us that the heart could not be felt and the breath did not cloud a mirror. Probably it is true that of those who receive shocks of great severity there are some in whom arrest of the heart is produced once and for all and that in these no known method of treatment is of any avail, while there are others who are not killed outright in this way but are left in a state of suspended vitality with heart and respiration almost arrested. From this state in time they may recover either without any assistance or with the assistance of artificial respiration. Artificial respiration should therefore always be made use of even if it be quite doubtful whether the condition of the patient is one at all resembling asphyxia.

Forsythe v. Law.

IT has seldom been our duty to comment on a more painful case than the one which lately formed the subject of investigation in the King's Bench Division of the High Court. The plaintiff, Miss FORSYTHE, a professional nurse, sued Dr. W. T. LAW for damages for alleged negligent and improper treatment, whereby her health had suffered and her ability to earn a livelihood had for a long period been at least seriously damaged. From the evidence it appeared that Miss FORSYTHE had been treated by Dr. LAW on and off since 1894. Unfortunately, the lady was the subject of many disquieting symptoms. Her heart was affected, she experienced febrile attacks with arthritic symptoms, and had a tendency to bronchial spasm which subsequently developed into a very acute form of asthma. Handicapped with this physical debility her constitution evidently was ill-suited to bear the strain incidental to the exacting duties of conducting a nursing home. Failing to relieve the spasmodic asthma by simpler remedies Dr. LAW resorted to the use of hypodermic injections of morphia. As time went on the patient unfortunately acquired the morphia habit. Discontinuance of the drug led to insomnia, which was met by the administration of chloral and other cerebral sedatives. The alleged malpraxis consisted partly of using the drugs in inordinate doses over a protracted period and partly in procuring them for Miss FORSYTHE and negligently placing them within her reach without let or hindrance.

So matters went on until through the interposition of third parties the patient passed into the professional care of other medical men, of whom Dr. J. KIRKLAND was one. This gentleman took a very decided view of Dr. LAW'S treatment and a very active interest in Miss FORSYTHE'S welfare. He was perfectly justified in ordering the abrupt withdrawal of the morphia if he thought it proper to do so; although opinions are very much divided as to the best course to be adopted in such cases. As a matter of fact the reaction in the case of the plaintiff was dangerously severe, and Dr. KIRKLAND admitted in cross-examination that the patient came very near to death, collapse following the stopping of the morphia. We think that the balance of evidence would hardly support his belief that it was not necessary to relieve insomnia. Professional judgment would scarcely subscribe to his unqualified impeachment of Dr. LAW whom he thought responsible for the lady's taking overdoses of chloral "because he must have known it." From the admissions in the witness-box it is certain that no one could imagine that Dr. KIRKLAND had not served Miss FORSYTHE zealously, though possibly indiscreetly, in so far as his professional brother, Dr. LAW, was concerned. We publish a letter in our columns this week from Dr. KIRKLAND, in which he pleads his proper professional regard for Dr. LAW; and while we are bound to believe his words we must also point out that we do not quite follow his reasoning. It was pleaded with unsurpassable force and eloquence by Sir EDWARD CLARKE, who must regret considerably having accepted the brief, that Dr. LAW had been guilty of gross misfeasance. There was something more in the indictment than a charge of mere negligence, since Dr. LAW was accused of having arranged "a mock consultation." His ability, attainments, and methods of action might have been called into question without a foul imputation being cast upon his honour. We endorse the statement by the jury that the action ought never to have been brought, and still more forcibly the stricture passed by Mr. Justice GRANTHAM on the unfairness of the way in which the plaintiff's case was conducted.

Miss FORSYTHE'S case differed in many respects from that of an ordinary patient. She was conversant with the action of the drugs that were prescribed for her and she must have known that taken in excess their influence would be extremely baneful. Dr. LAW acted somewhat unwisely, knowing the highly susceptible nature of Miss FORSYTHE, in procuring the medicines for her. In his own interest he should have fortified himself against the cruel fate which ultimately befel him. Nevertheless, it must be conceded that he was guilty of no dereliction of duty, for had he simply issued prescriptions for every dose in the most

orthodox manner there was nothing whatever to prevent the patient—a professional nurse—from obtaining an unlimited supply of the drugs. Moreover, it was shown that during a considerable portion of the time that Miss FORSYTHE was under his care she was being tended by a sister nurse who would naturally be expected to exert a restraining influence. Had Dr. LAW rendered his services over a term of years for gain and profit—which is not customary when the patient is a nurse—there might have been more room for criticism, but what are the facts? He gave freely of his time, his skill, and his kind-heartedness for no other reward than the satisfaction of feeling that he was discharging a charitable office with the hope of alleviating human suffering. He acted the good Samaritan—not wisely, perhaps, but too well—and what was his reward? Scorn and contumely were heaped upon him by some who were and are to be pitied and by others who deserve severest blame. He will have the consolation which his merits deserve, given unstintedly by his professional brethren and by a generous and just public opinion. His legal and moral acquittal was complete.

Annotations.

"Ne quid nimis."

THE LONDON WATER BILL.

THE debate on the London Water Bill did not reach a very high level, and not one of the speakers apparently realised the importance of the matter from the point of view of the interests of the people of London. Mr. Long contented himself with formally moving the second reading of the Bill. In this he was wise. Mr. Buxton accused the Government of trying to get away as far as possible from the principle of direct representation in the election of the Water Board and lauded the County Council; but Sir John Dorington, one of the members of the Llandaff Commission, pointed out that the London County Council was out of court because it did not govern the district which was to be supplied with water, but only a part of it; that, moreover, the outside authorities strongly objected to be placed under the administration of the London County Council; and, finally, that severance of the supply in bulk (as proposed by the latter authority as an alternative scheme) had been clearly shown to be impracticable. These matters are familiar to our readers, but they appeared to be new to the House of Commons. Sir John Dorington criticised the Government proposal to create a Board of such an enormous size. He very rightly emphasised the point that in the case of purchase it would be much better if the administration of the Water Board could begin its work piece by piece. This is a most important point. If the Board were elected truly to represent the water consumers, and had the option of purchasing the businesses instead of being compelled to do so, the chief objections of fair-minded people to the present Bill would disappear. Mr. Boulnois and Colonel Lockwood, both water-company directors, made speeches calculated to enhance the value of the undertakings. They could do no less. Mr. Mellor, who was a member of the Llandaff Commission, criticised the unwieldiness of the proposed Water Board and appeared to think that if a purchase of the undertakings were made under the provisions of the Lands Clauses Act all would go well and that everyone would be satisfied—the London County Council, the representatives of the water companies, and even "the London ratepayer whose interests ought to be considered in so important a matter as this." The London ratepayers should be grateful to Mr. Mellor for his kind thought. At any rate, he does not, as everyone else in this difficult question seems to do, ignore the fact that the people who have to pay the bill and drink the water deserve consideration. But if the ratepayers knew all the facts we cannot believe that they would agree with Mr. Mellor. On the contrary, they would see that they can hardly do otherwise than lose heavily in a financial way should they be bluffed or cajoled into allowing the Government Bill to pass, especially with the improvements of Mr. Mellor and the water company directors incorporated. Sir John Maple criticised the Bill from a financial standpoint, and evidently did not consider that the Water Board as constituted under the Bill would include proper persons to fix the price to be paid for the companies' undertakings. Mr. Asquith declared for the London County Council as *par excellence* the proper water authority for London. Therefore he condemned the Bill entirely. His speech, coming from an eminent jurist and an ex-Home Secretary, cannot fail to be damaging to the Bill, even though it does not convert many members of the House of Commons to his estimate of the London County Council's claims. Mr. Walter Long with refreshing complacency decided that the Government must have struck the fair middle path because the measure was so opposed at either extreme. On the one hand the Government was told that the measure would be a grievous burden to the ratepayers, and on the other hand the water companies were protesting their forlorn condition under its provisions. The Bill was then read a second time, and after further debate was referred to a Joint Committee of both Houses.

A SUCCESSFUL IMPOSTOR.

CHARLES WILLIAM BURROWS, who was sentenced by Mr. Justice Bucknill to seven years' penal servitude at the Liverpool assizes, seems to have had a surprisingly prosperous career during the last few years, and as he was able to make members of the medical profession his especial victims the history of his crimes is worth recounting in our columns. He was at one time apprentice to a chemist in Tottenham Court-road, and as such he is stated to have had charge of branch establishments. Making friends with medical students he attended lectures, apparently posing as a medical student himself, and in this character he acquired some knowledge of surgery. For a period after this he lived by his wits and otherwise, now playing in a theatrical orchestra, now travelling with a theatrical company, and now introducing to Brighton audiences a bullet-proof coat. In 1898 he seems first to have thought of turning his medical and surgical experience to advantage by purchasing a practice, and his subsequent actions were ascribed by his counsel at his trial to his failure to gratify this ambition, when a medical man who had promised to advance the necessary money declined to complete the transaction on discovering that the prospective borrower was not qualified to practise. In spite, however, of the drawback of impecuniosity he nearly won success by ingenuity. He assumed the name of Mr. James Joseph O'Donnell which appears in the Medical Register and had, it seems, no difficulty in obtaining temporary employment as a locum-tenent at Wigan. While there he learnt that a medical practitioner at Hindley wanted to sell his practice, and no doubt the fact of his being at the moment locum-tenent to a medical man strengthened his hand for his next move. The gentleman to whom he introduced himself at Hindley agreed to sell him his house for £1600 and his practice for £750, and he obtained from a third person on the strength of this transaction £75 in cash, to be expended on the purchase of furniture, as well as a horse and carriage from the vendor of the practice.

These dealings accounted for three of the charges to which he pleaded guilty—namely, obtaining by false pretences the signing of the contract to sell the house and the obtaining of the horse and vehicle and of the £75. The two other matters which he also admitted at Liverpool were the theft of certain postal orders that fell into his hands when acting as locum-tenent, and bigamy, for incidentally in the course of his varied career he had been married once and had twice subsequently gone through the ceremony of marriage, his first wife being still alive. Before he was sentenced there were, moreover, other possible charges deposed to by London detectives, including the larceny of a horse and trap, the property also of a medical man, larceny of a silver flute and of electrical fittings, and an ingenious fraud, apparently the first of the whole series, perpetrated on certain financial agents and electrical experts. These he had deceived by an ingenious mechanical device into believing that a machine, which he claimed to have invented, was a new form of electrical generating apparatus, and they had accordingly formed a syndicate to develop the novelty and had paid him a salary as manager. Two other charges—the one of obtaining £50 by means of a worthless cheque, the other, larceny of a watch—were also mentioned. In connexion with the electrical fraud he had represented himself as formerly assistant house surgeon at St. Bartholomew's Hospital, and it was even stated that on one occasion he obtained, and for some months filled, the post of house surgeon at the Hope Hospital, Salford. It is not surprising that the cumulative sentences imposed upon him involve a fairly lengthy term of incarceration. The nature of the frauds, however, and the qualifications which enabled this remarkable scoundrel to perpetrate them may serve as a useful warning to members of the medical profession, and, so far as the circumstances are applicable, to other professional men as well. We presume that Burrows had testimonials of some kind that he could exhibit, and, as we have said, he could point to his assumed name in the Medical Register. To some extent, no doubt, he could also refer to persons for whom he had done work and whom he had in their turn deceived as to his qualifications. His career, however, would have been checked at many points had his victims taken the precaution properly to verify such references as would necessarily have involved his identity and his qualifications. We note, for example, that at one period he spoke of having a brother practising as a solicitor, but there does not seem to be a solicitor of the name mentioned in the Law List as in practice at the town he named. Again, a man seeking either the post of a locum-tenent or to purchase a practice cannot complain if he is asked to give references to medical practitioners or to the officials of the hospital at which he was trained. These, if followed up would, at all events, betray a flagrant impostor, even though testimonials and references may not always reveal the precise merits and demerits of the person who seeks to obtain a coveted position. It is, in any case, highly imprudent to reckon a total stranger to be honest merely because he is plausible, and to enter into business relations with him on the strength of his familiar use of the honoured names of persons of undoubted probity. The persons who, a man boasts, will be most happy to corroborate his own accounts of himself may, when properly approached, tell a very different tale from that predicted, and he who proffers them for the purpose cannot complain if he is taken at his word and application is made to them.

THE DISTRIBUTION OF PLAGUE.

As regards The Mauritius a telegram from the Governor, received at the Colonial Office on Feb. 28th, states that for the week ending Feb. 27th there were 7 cases of bubonic plague, of which 3 proved fatal. As regards Egypt, during the week ending Feb. 23rd 8 cases and 5 deaths from plague have been reported from all Egypt. 5 cases and 4 deaths were reported from Tantah, 2 cases from Kom-el-Noor, a village near Mit-Gamr, and 1 case and 1 death from Alexandria. All these cases and deaths occurred among the native population. 3 of the deaths at Tantah occurred out of hospital.

THE MIDWIVES BILL.

THE Midwives Bill which is now referred to the Grand Committee on Law has such important medical bearings that we need not apologise for constant recurrence to it. We wish to call attention to some of the points which were made by the various speakers in the debate on the second reading, whose speeches will be found fully reported in our present issue (see page 688). A careful perusal of these speeches must lead all medical men to the conclusion that the latest edition of the Midwives Bill has exactly the faults which its promoters at different times and in different ways declared that it has not. It tends to set up an inferior order of general practitioners and it is no great exaggeration to call it an infringement of the Medical Act. Lord Cecil Manners and Mr. de Tatton Egerton, respectively the proposer and seconder of the second reading, did not disguise this fact. The former spoke of the Bill as "putting the profession of midwifery on a par with the profession of medicine," and the latter approved of the absence of any regulation obliging midwives to take out an annual licence on the ground that "doctors did not have to take one out." Mr. Heywood Johnstone, speaking in a similar strain, considered that certified midwives would find it a humiliation to take out a yearly licence. Clearly all three speakers demand for the midwifery nurse the dignity of a professional status. They hold that because medical men, a highly educated body with a strict professional code and a recognised social position, are under no local control, the midwifery nurse should be equally exempt. Sir John Batty Tuke moved the rejection of the Bill in a sound speech. While he agreed with Lord Cecil Manners that the opposition to previous Midwives Bills had been due to difference of opinion on the precise legislation required rather than to disapproval of the general principles of the measures, he found that the present Bill did not go far enough to be practical. A Bill which does not penalise the work of the uncertified midwives seems to us to leave the parturient poor at the mercy of exactly those Gamps whose calling it was supposed to be the object of the Bill to suppress. Sir John Tuke's criticism of the Bill for the omission of the penal clause, which was contained in the 1900 version of the measure, elicited from Mr. Heywood Johnstone the somewhat remarkable statement that he had been informed in high quarters that it would be hopeless to attempt to carry the measure if it were encumbered with such a cause. The words are remarkable, not because there is anything unlikely in the statement that they contain—on the contrary, they have all the stamp of accuracy—but because they were uttered by Mr. Heywood Johnstone. For Mr. Heywood Johnstone is the gentleman who quoted this penal clause to us as a satisfactory reply to certain of our criticisms of the previous measure. Dr. Farquharson spoke in favour of the Bill in terms which proved it to be a long time since he took his medical degree. He seems to be unfamiliar with the needs of the present curriculum of medical education and with existing professional feeling. This is fatal to the value of any views he may hold, for, as Sir Walter Foster pointed out later, the subject of the Midwives Bill is one that has been growing steadily in complexity for the last 40 years. We hope that the Grand Committee on Law will perceive that Dr. Farquharson's opinion cannot be taken as representing medical feeling. In

all the circumstances of the promotion of this Bill we do not hold out much hope to our readers of obtaining the modifications in it that are, in our opinion, necessary. The medical profession have not been united upon the subject, and the more temperate and influential critics of the different measures that have been before Parliament have been hampered by the violent language of those who are opposed to all legislation. As a result medical opinion and the opinion of the General Medical Council have not weighed with the legislature as they should have done.

THE ARMY MEDICAL DEPARTMENT.

As will be seen by our Parliamentary Intelligence Mr. Brodrick, in answer to a question put by Sir John Tuke on Friday, Feb. 28th, said that the warrant bearing on the re-construction of the Army Medical Department would be issued before the vote for that department was taken. In introducing the Army Estimates on March 4th Mr. Brodrick implied that a hostile motion bearing on the new scheme had been put down.

DURATION OF LIFE IN EPILEPTICS.

IN a recent *Thèse de Paris* (1902) by Dr. J. Carton an attempt is made to obtain definite conclusions regarding the duration of life in epileptics, a subject on which much vagueness of idea has prevailed hitherto. The chief causes tending to shorten the life of the epileptic are gastro-intestinal disorders, pulmonary tuberculosis and septic pneumonia following inhalation of food particles during a fit, and injuries sustained in fits. Dr. Carton collected information regarding the ages and causes of death of 419 epileptics at the following asylums—viz., Clermont, Maréville, and Bicêtre, the patients being idiots, imbeciles, or feeble-minded. The following table gives the percentages of deaths at different age-periods in the epileptics referred to:—

Age-period.	Percentage of deaths.	Age-period.	Percentage of deaths.
5 to 10 years	11·9	25 to 30 years	8·6
10 ,, 15 ,, ...	14·3	30 ,, 35 ,, ...	6·2
15 ,, 20 ,, ...	22·4	35 ,, 40 ,, ...	4·5
20 ,, 25 ,, ...	9·6	40 ,, 45 ,, ...	6·2

Above and below these ages there were but few deaths—in all 15·8 per cent. of the total. The average age at death was 25 years and two months as deduced from the above table. Taking, however, different asylums it appeared that while the average age at death was 35 years and nine months among the patients at Clermont it was 39 years and four months at Maréville, 37 years and eight months in the department of the Bicêtre Asylum under Dr. Chaslin, and 20 years and four months in the department of the same institution under Dr. Bourneville. The last section included the largest number of patients of the general total, and the average age at death when all patients were included was, as already stated, 25 years and two months. A comparison of this with the age at death of other patients in the same institutions showed that the average age at death amongst the latter was 50 years, so that the shortness of life of the epileptic seemed to be clearly established. Among the chief causes of death the following were ascertained, as well as the proportions of deaths attributable to each cause: asphyxia, 1·2 per cent.; fracture of the skull by falling in a fit, 0·9 per cent.; pulmonary congestion, 7 per cent.; bodily malnutrition, 10·7 per cent.; pneumonia and broncho-pneumonia, 11·9 per cent.; pulmonary tuberculosis 16·7 per cent.; and severe and prolonged fits, 31·5 per cent. The remaining deaths were due to other causes. It thus appears that while nearly one-third of the epileptic patients died from severe or prolonged convulsions, 35·6 per cent., or slightly more than one-third, died from pulmonary troubles, such as tuberculosis or pneumonia, while only a small proportion of deaths (2·1 per cent.) was due to asphyxia or to injuries sustained in a fit.

SMALL-POX IN LONDON.

THE returns of small-pox for the past week are as follows: on Saturday and Sunday, March 1st and 2nd, 63 fresh cases were notified and removed; on Monday, March 3rd, there were 90 fresh cases; on Tuesday, the 4th, there were 70 fresh cases; and on Wednesday, the 5th, there were 56 fresh cases.

"DR. BELL" AND THE POST-OFFICE.

THE issue of our contemporary *Truth* for Feb. 27th contains a statement to the effect that the editor of that journal has been indirectly responsible for the conviction of a blackguard named William Reid who was sentenced at the Lewes Assizes to six months' hard labour for sending filthy little books and other goods to a schoolboy. The master of the boy sent the contents of Reid's packet to the editor of *Truth* who forwarded them to the police authorities at Scotland Yard, with the result which we have recorded above. Now, if the police can act in this manner in the case of William Reid—the offence was apparently that of sending filthy literature through the post and the fact that such wares were sent to a minor had nothing to do with the case—why can they not do the same in the case of the scoundrel who calls himself Dr. Bell, who also sends dirty pamphlets through the post? On Jan. 28th, 1896, Dr. Bell, whose name was said to be Henry Walters, was fined at Marlborough-street Police-court in the sum of £20 and six guineas costs for using the titles "M.D." and "Doctor" without being a duly qualified medical man.[1] Bell still continues to call himself "Dr." and to send out his abominable trash, or, at any rate, he was doing so last month. Will the police authorities take the matter up or will they not? If not, will Lord Londonderry think about it? We shall be happy to send his lordship half a dozen copies or so of Bell's pamphlet, together with sundry letters which have reached us from indignant correspondents.

AUTO-INTOXICATION AS A FACTOR IN THE PRODUCTION OF CEREBRAL AND MENTAL DISORDER.

THE toxæmic theory of disease has lately assumed a considerable degree of prominence in regard to insanity and cerebral disorders generally. In a contribution to the *Scottish Medical and Surgical Journal* for February Dr. T. S. Clouston of Edinburgh deals with melancholia and the toxæmic theory of insanity. "The more one sees of mental disease in its typical varieties," says Dr. Clouston, "the stronger becomes our conviction that hereditary brain weakness is the prime factor in its causation." The argument as developed by Dr. Clouston was that by the application of the knowledge which we possessed many morbid brain conditions might, if treated early, be prevented from developing into actual insanity. Such measures to counteract mental disease ought to begin from birth. Diet, environment, education, attention to infantile nervous ailments, choice of occupations, special training in habits of self-control, avoidance of alcoholic excess and sexual errors, and suitable choice of mates, were among the measures recommended as capable of being adopted in order to avert threatened mental breakdown in a predisposed subject. Emotional over-sensitiveness predisposed to melancholia, especially if such a condition was inherited from parents, was fostered

[1] THE LANCET, Feb. 1st, 1896, p. 310.

during growth by injudicious education, and was subjected during later life to hard stresses and struggles. It especially seemed certain that when the strangest and most inexplicable symptom of melancholia arose and persisted—viz., the tendency or impulse to suicide—that "such reversal of the love of life was the sure seal of nature that the death of the individual so affected was the right thing for the race." Even in the milder forms of melancholia the cerebral depression was followed by changes in bodily nutrition and metabolism. The gastric juice became defective in digestive power; the temperature, the pulse, and the arterial pressure were changed; the peristaltic action of the bowels was enfeebled; constipation set in; and secondary changes in the contents of the alimentary canal were brought about which led to toxæmia. The urinary and skin secretions were also changed, and after a time the patient began to waste and to lose weight. Such secondary toxæmic conditions completed the vicious circle of pathological processes, but the primary and immanent condition was "a hereditary brain weakness and instability without which toxæmia would not cause melancholia or adolescent insanity with its typical dementia—these together being by far the most numerous and the most characteristic of the psychoses." Dr. F. W. Mott's theory that the brain substance formed by its dissolution poisons which further destroyed it, seemed to need far more proof than he had given. Antitoxins were being investigated and used in the treatment of certain toxæmic insanities. Such methods were commendable, but they should be guided above all things by the fact that in very many cases it was the primary cortical disturbance which had caused the digestive troubles, the constipation, the urinary disturbances, and the excess of toxins and bacteria in the bowel as indicated both by the presence of leucocytosis and by the chemical study of the urine. So that while feeding and the administration of strychnine, iron and quinine, paraldehyde and alcohol, together with rest from work and worry, were the primary therapeutic necessities, the administration of calomel and salol as laxatives and intestinal disinfectants, and of diuretics and diaphoretics to promote secretion, was also indicated. On the other hand, there could be little doubt that toxæmic conditions played the chief part in general paralysis, puerperal insanity, and alcoholic insanity, and probably also in some forms of epileptic insanity. Most of the cases of climacteric insanity and the less acute cases of senile insanity did not exhibit during life or after death any proveable toxæmic symptoms, and finally there were examples of a common sort in which a solitary-living old maid or bachelor became melancholic and morbidly suspicious, and sometimes developed auditory hallucinations; all these mental symptoms resulted apparently from mere want of social stimulus to the brain cortex, just as a child became dumb through getting deaf, without any suggestion of toxic poisoning. Mental disease was, in short, too complex to fit any one theory.

THE DEBATE ON THE ARMY ESTIMATES.

THE House of Commons went into Committee on the Army Estimates on Tuesday last. Mr. Brodrick, in a speech which occupied two hours in its delivery, made his annual statement in reference to the army, and subsequently a debate took place on the concentration camps. Mr. Brodrick had an extremely difficult and complicated subject to deal with, but it cannot be denied that he handled it with marked ability, arranging and expounding his details with great clearness. Whatever may be the results of his proposals generally they are, at any rate, conceived on large and bold lines. As regards the changes which Mr. Brodrick seeks to introduce, his proposals for increasing the pay of the soldier, for doing away with the present vexatious and irritating system of stoppages, and for the establishment of more elastic and suitable terms of service with the colours and in the reserve, will, we think, commend themselves to the common sense of the community. Mr. Brodrick, while frankly admitting mistakes and shortcomings to have taken place, had, of course, a good deal that was very effective to say in vindication of his own department in the conduct of the present war. But it is to his remarks on the reforms intended to be introduced into the Medical Services and to the increased establishment of an Army Nursing Service that our readers will naturally turn with most interest. It will be seen, however, that the War Minister has not added much to our knowledge in these respects. While most people will cordially concur in the objects which he has in view and will be ready to accept his assurance that "everything that the wide experience of civil practitioners can bring to bear on the new system has not been lost sight of in drawing up the scheme," we should have been glad if he had at the same time told us that he had also availed himself of "the wide experience" of some army medical officers, surely useful advisers in the case of drawing up a scheme expressly designed for an army medical service. Mr. Brodrick evidently believes that the new scheme will prove satisfactory, and so far as he describes it we may share his belief, but his description does not go very far. We obviously want to know a good deal more than he has told us in his speech in order to form a definite opinion in regard to it and we must be content to await the appearance of the promised warrant before pronouncing one. We know, for example, nothing as yet of the intentions of the Indian Government in regard to the War Office scheme and it has to be borne in mind that a large number of medical officers are always serving in that country.

SENTIMENTALITY'S CASUALTY LIST.

THERE is no surer test of a man's culture or of his degradation than his manner of evincing sentiment and the causes which move him to it. Every human creature is sentimental to a greater or less degree, but in proportion as he is high in the scale of self-control and of intellect so is a man not the slower, indeed, to be moved, but the more reluctant to show to others the depth of feeling aroused within himself. When joy is the emotion that sways him he may perhaps wish his fellows to participate in the good fortune, but when he is the prey of grief the refined man closes his lips and hugs his sorrow. It is the savage races whose funeral rites are the most elaborate and among ourselves it is with the uneducated that sorrow makes the greatest show. Undertakers have their greatest importance in poor quarters and "plumes" wag more largely in the Jago than they do in Mayfair. It is not that sorrow is more acutely felt in the one instance than in the other, but rather that one class of persons is accustomed to control, another to expose, its emotions. Moreover, the educated have learned to consider always the effect of their actions upon others, whereas the poor man who is stricken feels only that he is not doing justice to the cause of his sorrow unless he makes a demonstration of his emotion. Such practices are sufficiently to be regretted when they lead only to ill-afforded expense and to a reaction of drunken hilarity. When the unbridled display of ignorant sentiment has dangerous and actually fatal issues it is a blow indeed to our vaunted education. In Essex lately a child died from diphtheria. The little girl's schoolfellows were allowed to kiss the body as it lay in the coffin. Other deaths among the children soon followed. No more cruel sacrifice to unthinking sentimentality could possibly be imagined. We place by the side of this another

instance where sentiment certainly cannot be blamed, but where ignorance is the factor in common with the above example. This case is *à propos* inasmuch as it illustrates well one of the dangers arising from the uninstructed midwife. A young married woman died one week after her confinement. She had been attended "as casual nurse by a Mrs. Greenroyd who in addition to this duty performed work as a charwoman at a house where there was scarlet fever. The fever was in this way communicated to the lying-in woman who died two days after from a very malignant form of scarlet fever." The coroner, it is satisfactory to read, allowed the body to be viewed through a window, the coffin containing it having been unscrewed and placed on chairs for the purpose. The action of the mothers of the children who died from diphtheria, and the action of the coroner, afford a striking contrast between the cruelty of ignorance and the kindness of science. The coroner protects his jury, a body of men with a bare business relationship to himself; the sentimental mothers bid to an infectious death children for whose safety probably they would have been willing to make any sacrifice. From the poor girl who jumps into the river because she is unloved to the small-pox victim who will not have "matter from an animal put into him" misguided sentiment in one way and another claims a long list of victims.

SCOTTISH POOR-LAW MEDICAL OFFICERS.

WE have on many previous occasions commented upon the grievances to which the Scottish Poor-law medical officer is exposed. But we have rarely come across an exhibition of more spiteful malignity than the proceedings of the Parish Council of Clyne at a meeting held at Brora on Feb. 11th and reported in the *Northern Times* of Feb. 13th. After the opening of the meeting had been much disturbed by sundry rowdy malcontents and the venue had been changed from the council chamber to the Temperance Hall, a letter was read from Peter Sutherland lodging complaints against Dr. G. Nicoll, medical officer of the parish of Clyne. Mr. Sutherland having remarked that he was not a pauper, the chairman stated that the council had no right to interfere with a practitioner's private practice. At this obvious truism there were "booing and groans, and shouts of 'whose duty is it if not the Council's?'" Mr. Sutherland's letter was then read and the charge was as follows. On Dec. 21st, 1901, his child was ill. Dr. Nicoll was called and he examined the child. He also came on Dec. 27th and 28th. By the evening of Saturday, the 28th, the child was seriously ill and Dr. Nicoll was sent for but could not be found. He eventually came on Sunday evening. In the meantime another practitioner, Dr. Simpson, had been telegraphed for, but did not arrive until just as Dr. Nicoll was leaving. The child had diphtheria. Mr. Sutherland wound up his plaint by saying: "I am a poor man. My child is dead and I will have to pay for Dr. Nicoll, and I will have to pay Dr. Simpson about £1 besides. As you are responsible for Dr. Nicoll and I could not find him and therefore had to call Dr. Simpson I hold you responsible for Dr. Simpson's account." Mr. Melville said that it was very hard that the people of Clyne had to send to other parishes for a doctor when they required one. Mr. Hamilton followed in the same strain. The chairman having advised Dr. Nicoll to resign the matter dropped. A public meeting then followed at which Mr. Hamilton spoke. He is reported as speaking thus: "The doctor must resign. It is too bad for us to have doctors coming from other parishes. ..... It is the ratepayers that pay his salary and not the parish council, and I consider that it is the council's duty to see that the people get justice." Finally, the meeting decided that the parish council should within 14 days ask Dr. Nicoll to resign at once or within three days of his receiving notice. We take this opportunity of remarking that a "parish doctor," or, to give him his right title, a "medical officer to a parish under the Poor-law," is not, like the parish pump or the parish church or the parish stocks, able to be made use of by anyone simply because he or she happens to be a parishioner. A parish medical officer is a duly-qualified gentleman elected by a board of guardians to look after at a certain salary the sick paupers within the limits of the parish. The Melvilles and Hamiltons of Clyne seem to think that the parish medical officer is bound to go to anyone in the parish who may send for him, presumably with no further fee than his salary for looking after paupers. We are glad to see that Mr. Sutherland acknowledged his indebtedness to Dr. Nicoll; but he had no right to intrude his private dispute with his medical man upon the parish council, neither had the parish council any business to consider the matter, and why the Hamiltons and Melvilles should poke their noses in we fail to see. If Mr. Sutherland feels neglected, his course is to bring an action for malpraxis.

THE ANNUAL DEBATE AT THE CHELSEA CLINICAL SOCIETY.

TWO special meetings of this society will be held in the Jenner Institute of Preventive Medicine, Chelsea-gardens, Grosvenor-road, S.W., on Tuesday, March 11th, and Tuesday, March 18th, 1902, at 8.30 P.M. The subject for debate is Cancer, its Nature, Origin, and General Principles of Treatment, and the following gentlemen are announced as intending to take part in the discussion. On March 11th Dr. J. F. Payne (who will open the debate) will be followed by Dr. John F. W. Tatham, Professor R. T. Hewlett, Dr. G. T. Beatson, and Dr. J. Galloway, while a paper will be read by Dr. H. R. Gaylord (New York) on Cancer in Swine, with lantern slides. On March 18th Sir William Mitchell Banks will open the debate and will be followed by Mr. H. G. Plimmer, Mr. A. Pearce Gould, Mr. A. W. Mayo Robson, and Mr. A. Marmaduke Sheild. A communication from Professor Adami of Montreal will be read and Dr. A. Barry Blacker will demonstrate the present position of treatment by means of x rays and ultra-violet rays and show the apparatus. Any member of the medical profession will be welcome to the debates on presentation of his card.

THE RELATION OF THE CHURCH TO SANITARY REFORM.

SOME time ago we adjured the clergy to preach vaccination and revaccination and we are glad to know that our advice fell on heeding ears. The Rev. Harry Wilson, who is well known as an earnest and energetic parish priest in a very poor part of London, tells us that he preached on the subjects we mentioned and he adds: "I only wish I could get as much obvious result from my ordinary sermons as came from this one, as I am glad to say that the great majority of our people have been revaccinated." Mr. Wilson has had the substance of his sermon reprinted as a four-page leaflet, a copy of which he has sent us. Over 8000 copies of it have been sold and the matter is excellent. Perhaps the commencement might be called sensational, but nowadays sensationalism, if the facts stated are true, is necessary to catch the understanding of the average man or woman. Here are the words: "In the town of Gloucester there is a beautiful cemetery and in one corner of the cemetery there are the graves of no less than 280 little children, all under 10 years of age, all of whom died seven years ago when a terrible attack of small-pox visited that town. Of these 280 children who died of small-pox 279 were unvaccinated and only one was vaccinated." Well,

indeed, may anti vaccinationists think with shame on those exquisite lines :—

> "Continuo auditæ voces, vagitus et ingens
> Infantumque animæ flentes .....
> Quos dulcis vitæ exsortes, et ab ubere raptos,
> Abstulit atra dies, et funere mersit acerbo."

The leaflet goes on to give hard facts and figures which should convince anybody who is not in the bond of invincible ignorance. We congratulate Mr. Wilson on his efforts to spread knowledge on the subject of small-pox and how to avoid it.

THE VENTILATION OF THE HOUSES OF PARLIAMENT AND INFLUENZA.

THE bad ventilation of the Houses of Parliament is notorious, not because the system adopted is necessarily wrong in principle, but because, however perfect the means of changing the air may be, it is difficult to draw upon a fresh and healthy supply. The environment of the building is a grave obstacle to all attempts to provide the legislative chambers with healthy air. The conditions outside the Houses are such as probably to favour the multiplication of organisms whenever they abound. The river Thames is practically in contact with the south walls of the Houses of Parliament, acting as a cold-water jacket upon the air within, whatever steps may be taken to purify it. The air is thus constantly undergoing changes which render it unhealthy and take out that healthy property characteristic of a fresh breeze. There is something in the vitalising influence of fresh air which neither physiology nor chemistry can satisfactorily explain. It is, at any rate, pretty certain that, if perfectly pure air, obtained by mixing pure chemically derived oxygen and nitrogen in the proportion contained in the atmosphere, could be prepared on the large scale, it would not meet the needs of healthy physiological requirement in the same way as fresh natural air does. Artificially heated air is frequently described as "stuffy" and the French physiologists describe such air as "*devitalisé*"—a not inappropriate word. Foul air or unfresh air saps the power of the body to resist disease and hence the prevalence of disease, and especially respiratory disease, such as influenza, amongst those who habitually attend more or less crowded places or places where the air lacks its natural freshening effects. Thus senators in Parliament, judges in the courts, and the clerks in banks and insurance offices show a large percentage of epidemic influenza. In reply to questions this week in the House of Commons on the prevalence of influenza in the assembly no hope was held out that the condition of ventilation could be improved.

MEDICAL OFFICER OF HEALTH AND PUBLIC ANALYST.

WE expressed before now the opinion very definitely that municipal bodies are not well advised in combining the appointments of medical officer of health and public analyst. Such a combination for obvious reasons cannot be for the public advantage. Nowadays the science and practice of public hygiene are quite sufficient in themselves to occupy all the time of a medical officer who discharges his duties efficiently, in which case he is prevented from giving that systematic attention to laboratory work which is essential to the performance of the duties of the public analyst. The duties of a medical officer of health are quite exacting enough in regard to sanitation without the additional burden of having to undertake the analysis of some hundreds of samples of foods and drugs per annum. This has already proved to be the case in some of the municipal boroughs where one man formerly occupied the two posts, and where now the medical officer and the public analyst are two independent men, acting in coöperation. The same situation has just been arrived at by the Health Committee of the Birmingham City Council, which has reported that the duties attached to the office of medical officer of health require Dr. Alfred Hill's undivided attention. Dr. Hill himself pointed out to the committee that the work of the joint appointments of medical officer of health and public analyst is too much for one man and asked to be relieved from the duties of the latter office. The committee was sensible enough to concur in this opinion and it decided to appoint a public analyst at a salary of £350 per annum, the medical officer's salary, considering that he devotes the whole of his time to the service of the corporation, being permitted to remain as it was when he held both posts. Other municipal bodies will find that they will be compelled to adopt a similar course.

STREET LETTERING AND LOCAL AUTHORITIES.

THE new broom is understood to sweep clean and certainly there are reasons why it should be able to do so. Yet it not infrequently fails to justify its thorough-going character. Even the especial broom which has been placed in the hands of borough councils might be better employed for the removal of sundry public inconveniences than it has been. For the present we will mention only one such. The wayfarer on our streets is usually in search of some particular house. By day he should succeed, even if a stranger, in finding a labeled corner which will serve him as a guide. The surer help of local informants is also available. After a time he arrives at his destination. The door is probably numbered, but above it as often as not is a sheet of plate-glass, either plain or fancifully uninstructive. He does not notice all this at the time. But how does he fare if he has to make the same journey for the first time after dark? The streets are deserted, the scarce policeman is not near, and the lettered angle, clearly enough read in sunlight, is little better than a Coptic text in the mellowed light of a street lamp several yards distant. On that lamp there is no inscription. It is only with the joint assistance of patience, ingenuity, and fortune that he reaches the street he is making for, and happy is he then if he quickly finds his number on doorways glazed with blank nothing or with romantic names or floral devices. This is the ordinary lot. The medical practitioner who wanders forth at the call of duty in the small hours of the morning has even less light upon his quest unless he have a messenger to lead him, which he has not always. Surely the public and he may reasonably ask local authorities to help them in this matter. We admit that these have done something, but much remains to be done, and the work is not such that any great outlay should be required to complete it. We would have every street and corner labeled with bold and bright enamelled lettering (as not a few fortunately are), every corner lamp similarly inscribed upon the glass (as a limited number are), and the glass plate over every house-door plainly numbered. If this plan were carried out, and by order, what comparative convenience and facility would result and what needless waste of time would be prevented.

LIVERPOOL UNIVERSITY: A MUNIFICENT GIFT FOR MEDICAL RESEARCH.

THE sum of £25,000 has been given by Mr. William Johnston, shipowner, of Liverpool, for furthering the university movement in that city. The money will be devoted, in accordance with the wishes of the donor, to promote research in pathology and physiology. The £25,000 are divided as follows: £10,000 are allocated to found a chair of chemical biology; £6000 at 5 per cent. interest are allocated permanently to endow three Research Fellowships of £100 a year each. Of these Fellowships one is to be held by a medical graduate of a colonial university, a second by a graduate of medicine of the United States,

and a third by a research student in gynæcology. The remaining £9000 are to be spent in building a laboratory adjoining the Thompson-Yates Laboratories, to accommodate the Tropical School, the professors of chemical biology, experimental medicine, comparative pathology, and the serum research department.

LEICESTER AND VACCINATION.

ON March 5th the Lord Chief Justice, Mr. Justice Darling, and Mr. Justice Channell gave judgment in the case of Moore *v.* Keyte. The case was an appeal from a conviction by the Leicester magistrates under the Vaccination Acts, the appellant having been prosecuted by the vaccination officer against the orders of the guardians. The most important question before the court was whether the vaccination officer had powers to prosecute without the consent, or against the wishes, of the guardians, and the court unanimously held that he had such powers.

SIR FRANCIS JEUNE, President of the Probate, Divorce, and Admiralty Division, and Mr. Justice Barnes have ordered the following notice to be put up in their courts: "If any person to whom an oath is administered desires to swear with uplifted hand in the form and manner in which an oath is usually administered in Scotland, he or she is permitted to do so. The following form of oath may be used—'I swear by Almighty God that I will speak the truth, the whole truth, and nothing but the truth.'" We trust that this excellent example will be followed by the other judges.

A MEETING will be held in the Governors' Hall of St. Thomas's Hospital on Tuesday, March 11th, at 4.30 P.M., Mr. J. G. Wainwright, J.P., the Treasurer of the hospital, in the chair, to consider the steps to be taken to raise a memorial to the late Sir William Mac Cormac, Bart., K.C.B., K.C.V.O., and to commemorate his connexion with the hospital and the medical school.

THE medical profession is asked to note that the permanent address of the Odontological Society of Great Britain is now 20, Hanover-square, London, W.

Pharmacological Notes.

DETERIORATION OF ALCOHOLIC SOLUTIONS OF PEPSIN.

EUG. THIBAULT[1] has studied the effect of alcohol on the activity of pepsin, varying the strength of the alcohol and the duration of the experiments. He finds that, provided the alcoholic strength is below 12·5 per cent., the solution shows no immediate loss of strength, but above this strength the solution immediately undergoes deterioration. The peptonising power of the solution is almost destroyed at the end of four months, whether the alcoholic strength be above or below 12·5 per cent. Hence it appears that pepsin should not be prescribed in the form of pepsin wine, as the ferment is destroyed to a greater or less extent according to the age of the liquid. It is pointed out that sugar and certain other substances present in the wine have a partial preservative effect.

THE ACTION OF PEPSIN, TRYPSIN, AND PAPAIN.

G. R. Baldwin and P. A. Levene,[2] after studying the action of proteolytic ferments on toxins, find that the diphtheria and tetanus toxins are digested, and not simply neutralised, by pepsin, trypsin, and papain. They are thereby rendered inert. Tuberculin, a nucleo-proteid, is weakened in its action by these digestive ferments; prolonged digestion with trypsin, but not with pepsin, destroys its activity.

VALUE OF UROTROPIN.

According to W. F. Lœbisch,[3] urotropin or hexamethylene tetramine is a good antiseptic, causes no bad symptoms, and lessens intestinal putrefaction. The ethereal sulphates of the urine are diminished.

LECITHIN IN TUBERCULOSIS.

H. Claude and Aly Zaky[4] recommend lecithin as an adjuvant to other means of treating tuberculosis from its specific action on the elimination of phosphates in the urine and its beneficial action on nitrogenous metabolism.

ACTION OF SUPRARENAL EXTRACT.

John N. Langley[5] finds that suprarenal extract causes a brief but active secretion of the salivary and lacrymal glands. This is not affected by degeneration of the post-ganglionic fibres of the superior cervical ganglion or by small doses of atropine, but the secretion is stopped by large doses of atropine. The extract has no certain effect on the secretion of sweat, but increases the secretion of bile. It acts differently on different involuntary muscular organs, causing, for instance, inhibition of the bladder, stomach, and gall-bladder, and contraction of the anal sphincters, uterus, and blood-vessels. The theory that the extract acts on sympathetic nerve-endings breaks down in various instances.

PHARMACOLOGICAL ACTION OF PURINE DERIVATIVES.

An important investigation has been made by Oswald Schmiedeberg[6] on the comparative pharmacological actions of some purine derivatives. Experiments were made with frogs and rabbits. The action of caffeine and theobromine is already known to be twofold—viz., nervous and muscular. The nervous action depends on the presence of nitrogen in the molecule, for it is exhibited also by ammonia and by ammonium salts. The muscular action is characteristic of the purine nucleus. Purine itself exhibits both actions, which are affected in degree by introduction of oxygen or alkyl groups. A large number of substances have been experimented with and their effects have been described.

[1] Journal de Pharmacie et de Chimie, Feb. 15th, 1902, p. 161.
[2] Journal of Medical Research, 1901, vol. vi., p. 120.
[3] Chemisches Centralblatt, 1901, Band ii., p. 705.
[4] Comptes Rendus de la Société de Biologie, 1901, tome liii., pp. 821 and 830.
[5] Journal of Physiology, 1901, vol. xxvii., p. 237.
[6] Berichte, 1901, Band xxxiv., p. 2550.

Looking Back.

FROM

THE LANCET, *SUNDAY, MARCH* 7, 1824.

LECTURE 39.[1]

Wednesday Evening, March 3d.

A few minutes after 8 o'clock the Learned Professor entered the Theatre. Several pieces of orange peel lay strewed upon the table on which the preparations are placed. This, said the learned professor smiling, as he took up one of them, is, I presume, *one of the missiles.*' We trust that this good natured rebuke will have more weight with the class than any formal argument, to show the folly of the puerile practice which prevails during the half hour preceding the Lecturer's entrance.

In the last evening's Lecture, gentlemen, I began to describe to you the subject of the formation of calculi, the different species of calculi, and the symptoms which attend them. I shall now proceed with this subject. The pain which a patient experiences from stone in the bladder is by no means in proportion to its bulk. It is not exactly in the inverse ratio to its magnitude, but still it approaches that inverse ratio. When a stone becomes excessively large, the patient generally loses the power of retaining his urine, and the distillation of urine from the bladder, prevents that contraction of it which occasions so much pain to the patient in discharging the last drops of it. Doctor FRANKLIN, the celebrated American philosopher, who died of this disease, suffered excessively for a number of years from it, but at last, when the stone acquired considerable magnitude, he experienced but little pain. The pain does not so much

[1] Excerpt from report of this lecture delivered by Sir Astley Cooper in the Theatre of St. Thomas's Hospital.

depend on the form of the stone as on the general irritability of the patient, and especially on irritability of the bladder. Thus you will sometimes in performing the operation find a stone excessively pointed, where the patient complains of but trifling symptoms; and on the other hand, when the stone is perfectly smooth, the patient suffers extreme pain. The pain, therefore, depends more on the irritability of the bladder and the constitution of the patient, than on the form or surface of the stone; *cæteris paribus*, however, rough stones will give the greatest degree of pain.

There are four different kinds of calculi, when chemically examined. A very nice examination may lead to further discoveries on this subject; but at present we are only acquainted with four species. The first is the uric acid, which is a common, but not the most common form of calculus. The second is the triple phosphate, or ammoniaco magnesian phosphate; the third species is the mulberry, or oxalate of lime, an excellent specimen of which occurred the other day in the boy at the other hospital. The other species was lately discovered by Dr. Wollaston, a most admirable chemist, and one of the first philosophers of the age, who developes every subject to which he applies his active and powerful mind, with an extraordinary degree of minuteness and accuracy. In examining the different calculi he discovered the species which I am now mentioning, to which he gave the name of the cystic oxide. With respect to the uric acid, it is distinguished by concentric lamellæ, and when cut has the colour and appearance of wood. (The learned Professor exhibited a specimen to the class.) It is soluble in alkalis, and alkaline medicines are therefore commonly recommended for this kind of stone.

THE DEBATE ON THE MIDWIVES BILL.

A FULL REPORT OF THE SPEECHES.

IN THE LANCET of March 1st we gave a brief outline of the debate on the Midwives Bill which took place in the House of Commons on Feb. 26th. We give now a detailed report of the speeches as the matter is of paramount importance to the medical profession, and have commented elsewhere upon the different views expressed.

Lord CECIL MANNERS moved the second reading of the Bill. He explained that the fortune of the ballot had made him responsible this session for the introduction of the measure, and while he believed thoroughly in the merits and general principles of the Bill he did not claim to have made an exhaustive study of the questions involved. This was a subject which had frequently come before the attention of Parliament. In 1878 a Bill was introduced and since then almost every year there had been a Bill. In 1892 a Select Committee reported to the effect that no woman should be allowed to call herself a midwife or to practise as a midwife except under suitable regulation, and again in 1893 it reported to the same effect. In 1900 a Bill drafted on the lines of these reports passed the second reading by a majority of 90 votes, and was successfully carried through the Grand Committee, but unfortunately it was too late in the session when it reached the report stage. The hon. Member then quoted resolutions of the General Medical Council and the Royal College of Physicians of London with a view to showing that there was a consensus of opinion among medical men in favour of legislation with regard to midwives. He ventured to say that the opposition which the Bill had hitherto met was more owing to the fact that experts differed as to the precise legislative action that should be taken than to any feeling that legislation was unnecessary. The hon. Member then proceeded to describe the existing state of things, the incompetence of many midwives, and the dangers to which women and their offspring were exposed in consequence of that incompetence. This country, he said, was the only civilised country, certainly the only country in Europe, where there was not some sort of registration and regulation of midwives. There were about 450,000 cases of childbirth in England each year which were attended by midwives alone, and most of these women were absolutely untrained and incompetent. The first object of the Bill was to secure proper training and the method by which it was proposed to secure it was the appointment of a central board of seven members, of whom four would be registered medical practitioners. This board would frame regulations for the training of midwives and their admission to registration, and for restricting their practice within proper limits. Certificates would be granted which would enable persons seeking the services of midwives to discriminate between trained and untrained women. In this respect the Bill followed closely the Medical Act of 1858 which laid it down that it was expedient that persons requiring medical aid should be enabled to distinguish the qualified from the unqualified medical practitioner. This Bill, in fact, put the profession of midwifery on a par with the professions of medicine and dentistry and veterinary surgery. He thought it would be unfair not to put the profession of midwifery on a par with these professions. The local supervision would be entrusted to the county council with power of delegation to the district councils, and would be secured by a system of notification similar to that under the Infant Life Protection Act, which he thought would be sufficient to ensure the identity of the woman and to trace her qualifications and character. He assured the House that when the Bill reached the committee stage its promoters would gladly welcome any suggestions for its modification or improvement, and what he asked the House to do now was to affirm the principle that those who desired the assistance of these women should be enabled to distinguish between those who were competent to give it and those who were incompetent.

Mr. DE TATTON EGERTON seconded the motion. The efforts for legislation on this subject began, he said, not in 1878, but as far back as 1813, when the Society of Apothecaries of London endeavoured to get a Bill. In 1878 the General Medical Council considered the matter so important that in that year they promoted a section which had reference to the organisation of midwives. In order to carry their Bill the Council found it necessary to drop this section because it was feared that it might make some confusion between medical men and midwives. Since that time the subject had been very well threshed out in the country. Several Bills had been before Parliament in order to try to remedy what he could only call a disgrace to this country—that there was no restriction whatever upon either the use of the title "midwife" or the employment of unqualified women. In Austria this legislation dated back to 1810, in Belgium to 1818, in France to 1803, in the Netherlands to 1865, and in Norway and Sweden to 1810. He had not been able to get the dates for Russia or Prussia, but in both these countries the regulations with regard to midwives were very stringent indeed. The General Medical Council, which had been one of the principal opponents of this Bill when it had been brought forward during the last three or four years, had a Bill prepared of its own, but it had never thought fit to bring it forward for discussion in that House. It had taken up the position, he would hardly say of the dog in the manger, but while it had not brought in its own Bill it had done all it could on every occasion to wreck the Bill of those whom he had the honour to represent. The General Medical Council in its last attack, said that the midwife should be required to take out a fresh licence. The Bill proposed that she should be certified and that the sanitary authority of the district should see annually that she was residing in the district and was doing good work. The legislature did not ask that a medical man who went to reside in a district should take out a licence annually, and why, he asked, should this condition be imposed upon a midwife? The Council also objected to the proposed constitution of the Central Board; it wished to have the whole matter in its own hands; it seemed to forget that there were other interests in the country besides its own. According to the Bill, there would be on the Board a majority of medical practitioners registered under the General Medical Council, and this, he thought, was as much authority as the Council required and ought to have. The promoters of the Bill had during the past three or four years had various deputations to the Privy Council. They had been assisted by the Privy Council with advice, and the Bill now before the House was the result of a meeting that had been held in conjunction, not only with the Privy Council, but also with the Home Office and the Local Government Board. At the meetings of the Privy Council they had received the most generous support, not only from the obstetric medical men, but from the Women's National Liberal Association, the Incorporated Midwives Institute, the Women's Industrial Council, the Women's Liberal Federation, and representatives of the body of

coroners. The evidence which the coroners had given them was of such a nature that if it could be printed and circulated among Members of the House it would convince the House of the absolute necessity of some such legislation as was now proposed.

Sir JOHN TUKE said that it was with a certain amount of regret that he moved the rejection of this Bill. It contained certain good points, but the Bill was so lacking in strength and purpose that he considered it to be really a useless measure. It was lacking in one essential and vital point, and on account of that he conceived it to be his duty to move its rejection. He supported the Bill of 1900 generally on the ground that, to his mind, it was an important measure bearing upon public health. He supported it notwithstanding the opposition of a section of the medical profession. The profession was by no means unanimous upon the question, but he thought as regards the present Bill he was not wrong in saying that 95 per cent. of the medical profession would oppose it on account of the omission of the penalty clause. The hon. Member had spoken of the attitude of the General Medical Council as being that of the dog in the manger. That was not so. He spoke in 1900 in order to represent the views of the General Medical Council, which was as desirous as he was that a really good and efficient Bill should be presented to the House. He supported the Bill of 1900 on account of the strong belief held that it would confer very great benefits upon parturient women, but the measure now before the House did not contain the clause which rendered the Bill of 1900 an important measure of public health, and the omission of that clause rendered this Bill in his opinion inoperative, futile, and to a certain extent mischievous. It omitted the provision to prevent uncertified women from practising and to his mind this omission constituted a cardinal objection to the Bill. He opposed it on this ground, though of course he had other grounds of objection. It had been said that the great object of the Bill was to provide women in labour with suitable and safe attendance. There was no one more anxious than he that a measure securing this object should pass, but it could only be secured, not merely by providing for the education and superintendence of midwives, but by a measure preventing the practice of incompetent women. It was a matter of common knowledge that amongst the women who acted as midwives there were a considerable number who, by their ignorance, carelessness, filth, and dissipated habits, constituted a serious danger to the public. Through their evil ways puerperal fever was generated and communicated from case to case. That most dangerous form of insanity spoken of as puerperal insanity was often engendered and many hundreds and thousands of women suffered for years from the consequences of ill-directed labour and not a few cases of death to mother and child occurred. For evidence of this it was only necessary to refer to the verdicts found in coroners' courts. The Bill of 1900 was not only calculated to build up a new class of midwives who after receiving an elementary education in obstetrics would be placed as to their practice under regulation and supervision, but by a special clause it was calculated to suppress the existing dangerous class. The present Bill failed in this most important particular. It did not suppress the evil out of which the movement for the registration of midwives arose. Under the Bill of 1900 only certified women were allowed to use the name "midwife," and, what was of infinitely greater importance, uncertified women who habitually and for gain practised midwifery were made liable to a fine not exceeding £5. According to Clause 3 of this Bill any woman who within two years from the date of the Act coming into operation claimed to be certified would be so certified provided she held a certificate in midwifery from the Royal College of Physicians of Ireland or the Obstetrical Society of London or such other certificate as might be approved by the Central Midwives Board, or produced evidence satisfactory to the Board that at the passing of the Act she had been in *bonâ-fide* practice as a midwife and that she bore a good character. Thus any woman who now acted as a midwife could obtain certification upon producing evidence that she was a respectable woman and fulfilled certain conditions laid down by the Central Midwives Board. Surely this was a sufficient protection of vested interests. By this clause only ignorant, disreputable, or incompetent persons would be precluded from certification—the very class of persons out of whose irregularities the whole question had arisen. As the Bill stood this class of persons would be allowed to continue their work unchecked by any authority or by any form of supervision. It was quite true that they could not put a notice-board over their doors or a ticket into their windows intimating that they were midwives, but these were small disabilities which would have no effect in the way of checking their practice. In spite of this Bill they would continue to be a source of danger and of disease. It might be argued that already the number of incompetent women was diminishing, consequent upon the extended views upon nursing generally, but evidence obtainable from the great manufacturing centres, from the metropolis itself—evidence obtainable from district nurses, Queen's nurses, and others—showed that at the present moment the dangerous midwife was still a power in the land. He would like the House to consider whether the provisions of this Bill were likely to lessen the number of uncertified midwives. They might produce a class of fairly well-educated women, educated in the rudiments of obstetrics and the first principles of cleanliness; but before a woman could get on the register she came under the jurisdiction of the Central Midwives Board, one of whose functions was to regulate the course of training and conduct of examinations of candidates. This Board would admit to the roll any woman who had had a certain amount of training, which in his opinion would be an absolutely unappreciable benefit. According to Clause 8 the midwife was placed under the immediate supervision of the county or district council and she had to pay fees. All that she got in return was the right to call herself "midwife" and to sue for fees, while alongside of her was a woman who paid nothing and was free from all authority. There was power to strike a woman off the roll for misconduct, but what did that matter? she could still go on practising. He believed that the promoters of the Bill were sincerely sorry when under the pressure of certain permanent officials they withdrew the penal clause and thereby absolutely eviscerated the Bill. It was said that the penal clause would create a new class of offence. He denied that. There was the Apothecaries Act of 1815 which was not repealed and indeed was constantly put in force. There was the case of solicitors and auctioneers and traders, and, as an hon. Member suggested, the case of the man who carried the gun. These were precedents; why not apply them to midwives? It would not be the creation of a new offence, but only the extension of an existing principle of law to a dangerous class. His own opinion was that the certified midwife would be in the minority. He had not argued the case from a professional point of view; he had done so from the point of view of a member of the general public. He held no brief for the medical profession. If he held a brief at all it was for the hundreds of thousands of women who either from necessity or choice were attended by midwives. He would gladly support this Bill, with, perhaps, some modifications, were the penal clause he had alluded to introduced, but as an old Parliamentary friend had said to him, "You can never make certain of anything in this House," and therefore he found it necessary to press his amendment. He did so on the ground that this was not a measure calculated to secure public health, that it was futile, and that it did not secure the advantage to lying-in women which its promoters had in view.

Sir BARRINGTON SIMEON said that he had no professional knowledge of this subject, but he happened to own land, and as a land-owner he knew that if midwives were given a certain amount of authority in the eyes of poor people because they were called "certified" or "registered" there would be far more danger of illegal operations being performed on young girls in trouble and on married women who did not wish to increase their families. This was a point which he thought should be considered before Members voted for the second reading of this Bill. In his opinion the Bill would create a new class of midwife who would be employed as a substitute for the medical practitioner. He admitted that the present state of things was unsatisfactory, but his view was that this measure would not improve it. No Bill could be satisfactory which must create trouble between local medical men and midwives.

Dr. R. FARQUHARSON said that there had been no more effective speech made yet in favour of the Bill than that by Sir John Tuke who, although dissenting from certain of the propositions, had given a most plain and practical testimony as to the great evils which were going on throughout the country, and had thrown in his lot with those who desired to find some remedy for a condition of things which

they all deplored. He did not think, however, that his hon. friend had quite fairly quoted the provisions of Clause 3, the effect of which was that any midwife who was now in practice must bring evidence satisfactory to the Board showing that she was not only a woman of good character but in *bonâ-fide* practice. His hon. friend omitted the *bonâ-fide* practice point, which was important.

Sir JOHN TUKE: It was merely an accident on my part.

Dr. FARQUHARSON, resuming, said that he took his stand on the broad general principle that it was high time something was done to remedy the present condition of affairs. Public opinion had been aroused and there had been evidence before two select committees that a great evil existed and ought to be remedied as soon as possible. They could not end the midwife, but it was reasonable that they should attempt to mend her. Every year 450,000 cases of female labour were attended by midwives. Many women preferred midwives. If he were a woman he would naturally prefer to be attended by a woman at a time when the softness and sympathy of a woman were so useful. It was perfectly well known, of course, that many midwives were ignorant and dirty, but he thought that, like medical students, they had suffered a little at the hand of comic writers, and if they were, in many instances, dirty, ignorant, and incompetent, then they must be educated and made less injurious and dangerous. He ventured to say that parturition was a purely mechanical process. In 99 cases out of 100 it was perfectly easy and natural and could be carried out without any difficulty whatever. He hoped that he would not offend the prejudices of any by saying that the reason why Edinburgh was always considered such a good school for midwifery was that the large size of the Scotch skull made the process of parturition more difficult than in England. Two or three months' training or 10 or 20 lessons would be quite enough to let a woman know how to deliver another woman in childbirth, and he was bound to say that with that training a midwife would know quite as much as did many medical men. When he took his degree in Edinburgh attendance at six labours was sufficient to qualify for midwifery, and if that was enough to give a man a knowledge of this particular branch of his practice, would not a woman who had probably attended 200 or 300 cases know as much as a man? He admitted that the Bill was not quite perfect, but it was a serious and an honest attempt to remove the evil. There would be a sufficiently good curriculum established by the Board, which was not at all a bad Board. It was not constituted by the General Medical Council, which had got quite enough to do with other things, but by the Privy Council, and it had to be accepted and supervised afterwards by the General Medical Council. It had been objected that the penal clauses were not introduced. That was a hopeless utopian dream. No House of Commons under the sun would ever pass provisions of that kind, and all that they could do was to give some kind of hall-mark which would enable the public to see who were qualified and who were not. He was glad that the honourable Member who moved the rejection of the Bill did not take the objection that the Bill would do harm to the medical profession. That was a line of argument which he repelled with indignation on the part of his profession. But it had been said that 95 per cent. of the medical practitioners were against it. Why? He hoped not on account of their own interests. What was the reason?

Sir JOHN TUKE: The absence of the penal clauses.

Dr. FARQUHARSON said that he was very glad to hear that, but, as he had already indicated, he did not think that any body of reasonable men would ever pass clauses which would do more than protect the public against the unauthorised practitioner. There was an argument put forward by Professor Horsley—namely, that the Bill would go far towards repealing the Medical Act by making midwives equal to those who were qualified by that Act—but he contended that anyone who used that argument could hardly have looked at the Bill, as the text made it quite clear that such a result could not take place.

Mr. GRIFFITH-BOSCAWEN supported the view that there should be a penal clause to prevent women who were not certified from practising.

Mr. EUGENE WASON said that the promoters of the Bill would have liked to take the General Medical Council along with them, but as they had had to take their choice between the Government and the Council he thought that they had done well to secure the allegiance of the former.

Sir FRANCIS POWELL supported the second reading in the hope that the Bill would be strengthened in committee.

Mr. R. AMBROSE said that he opposed the Bill because it created a distinct and inferior class of practitioners in midwifery over whom the General Medical Council could exercise no control, and because it contained no provision for qualified medical assistance in cases of difficulty.

Mr. W. LAWRENCE supported the Bill as a step in the right direction, and Mr. EMMOTT spoke in the same sense.

Colonel SADLER took the view that all that was wanted was trained nursing under medical supervision.

Mr. L. WHITE gave general support to the Bill, while admitting that it must be considerably altered in committee.

Sir WALTER FOSTER said that the subject was one that required deliberation on the part of men specially qualified to consider it, and it was a problem which even then would be very difficult of solution. He was, however, glad that the only thing which they differed about was the question of method, and in his opinion this Bill was not as good a Bill as those which had preceded it. It must be remembered that they were dealing with a subject which had been steadily growing in complexity during the past 40 years. No man was allowed to practise midwifery unless he had had five years' training and had obtained a diploma, so that if he (Sir Walter Foster) happened to be a general practitioner and wanted assistance in midwifery cases he could not get assistance from a pupil who had been five years in the medical schools and was perfectly qualified in every way except in having still to pass the final examination. He could not employ such a man to attend the simplest cases of labour. That was a very strong position for the law to take up, but it was the law as laid down in 1886. It was so strong that the General Medical Council had actually accused medical men of infamous conduct for employing men who were undoubtedly good at midwifery cases because these assistants were not qualified to go on the Medical Register. That attitude was taken, not in the interests of the medical profession, but entirely to save the public from the terrible diseases and suffering that they had experienced in the past at the hands of illegal and unqualified practitioners. The medical profession had been exceedingly zealous in maintaining a high standard of medical aid for the poorer classes; but if this Bill were passed in its present form all the structure that had been built up with great care in order to protect the public from the unqualified practitioner would fall to the ground. The Bill would not touch the worst cases—the cases of people in country districts and manufacturing towns who did not put out any brass sign but who had their own little connexions amongst people. The only people the Bill would touch were the certificated midwives who did at present undergo a certain amount of training, and the Bill would create practically a new class of practitioners. Although he was entirely in favour of something being done he could not vote for this Bill because it fell short of previous attempts. There would be no adequate supervision—it would be an enormous advantage to obtain licences from a local authority; they had not local control; there was no sensible medical control, for the General Medical Council was practically struck out of the Bill. Nor did he like the central authority. One of the representatives was to be from a body which was not known in his profession—namely, the Incorporated Midwives Institute. It was not strong enough for controlling tens of thousands of women all over the country. But he believed that the right course would be to refer the Bill to a select committee, because it was not a measure that could be discussed adequately in a full committee of the House or by a grand committee. The problem was too big to be in the hands of a private Member, it ought to be taken up by the Government; and in this connexion he suggested that the Home Secretary should consider a Bill for the registration of all nurses.

Mr. HEYWOOD JOHNSTONE said that the honourable gentleman who had just spoken had never done anything himself to help to solve the problem. It had been argued by some speakers that the Bill was defective in that instead of the licensing proposed in the Bill of 1900 a system of notification was inserted. The object was to provide for local supervision which they all believed to be important and necessary. Certain women had felt that it was a humiliation to take out a yearly licence, and therefore an effort had been made to meet the objection by substituting a much less harassing system—namely, that they should simply give notice of their intention of practising and of the fact that

they were practising. There was nothing which impaired the power of local supervision which local authorities were given in the Bill of 1900. These authorities would still have the power of general supervision, of investigating charges of malpractice, negligence, or misconduct, and of supervision, if necessary, and they would be able to keep their finger on the women practising in their area, without being unduly harassing. The main objection taken to the Bill was that it did not contain the words rendering unqualified practice illegal. The Bill gave to the person who needed the services of a midwife the power of discriminating between the women who were qualified and those who were not qualified, but, unlike the Bill of 1900, it did not absolutely penalise unqualified practice. It was impracticable to do such a thing, and he hoped that he was committing no breach of confidence when he said that the promoters had had information from high quarters that it would be hopeless to attempt to carry any measure at all if they encumbered it with a clause penalising unqualified practice. He was quite aware of the views of the General Medical Council on this point, but the promoters realised, and the Council realised, that the point was contended for as a stepping-stone towards rendering the practice of unqualified medical men absolutely penal. That had been the Council's aim and desire for a long time. It might be a very wise object, but at the present time the promoters had to consider what they could get in the Bill, and if they got even this Bill in its existing state they would do much to solve the difficulty. They were treading a somewhat unknown path, and until they had had experience of the working of this particular measure it was extremely undesirable that they should lay down, say, a hard-and-fast rule for so many months' training. All these things were better provided for in the end by rules which could be modified as experience suggested. He believed that when they came to thresh out the details they would find that there were more points of agreement than of difference. In conclusion, he mentioned that he had received a number of instructive figures dealing with the deaths of women attended by trained midwives sent out from some of the large hospitals and institutions. Out of 13,712 cases attended the deaths were only 17—a death-rate of 1·23 per 1000 as compared with a general death-rate in maternity cases of 4·66 all over the country. No other argument was necessary to show the superiority of the trained over the untrained midwife.

Mr. T. P. O'CONNOR, after describing himself as not an opponent of the Bill, but a vigilant critic of it, said that he objected in principle to the multiplication of registered bodies and expressed the view that the cry of "something must be done" had often led to unwise legislation. His contention was that women must not be allowed powers of practising medicine under less severe guarantees and safeguards than were applied to men.

Sir SAVILE CROSSLEY approved the Bill as a measure calculated to do good among the poorer classes of the community.

Sir MICHAEL FOSTER said that childbirth was sometimes spoken of as a travail, and it might be likened to a journey through which one might go with the ordinary discomforts of travel. It was a journey fraught with the utmost peril to life. Those who could afford it were able to carry a medical adviser with them so that he could be there whenever an accident occurred. But the poor could not do that, and as he understood this Bill it was designed in the interest of the poor in order that they might carry with them on this perilous journey, not a medical man, but one who knew when a medical man should be sent for. If he understood the object of the Bill it was simply to arrange that the public might know that there were special nurses different from the ordinary trained nurses. The main qualifications of these special nurses were, first, to know when to send for a medical man; second, to be cleanly and to know what cleanliness meant; and thirdly, never to drink. His interpretation of the Bill was that it simply demanded this and he looked with terror on any proposal requiring two or three years' training in an obstetric school. In his opinion it was far better for the House to throw itself upon the good feeling and the knowledge of the people than to trust to the enforcement of penal clauses. When the people knew that Mrs. Gamp could be trusted and that Mrs. Harris could not be trusted, even if Mrs. Gamp charged a shilling more than Mrs. Harris, he ventured to say that Mrs. Gamp would prosper and Mrs. Harris would disappear because she would be starved out of existence.

Mr. JOHN BURNS said that he had consulted medical practitioners in his constituency of Battersea on this subject as well as the sisterhood of nurses, and he had found that they viewed this legislation with sympathetic consideration and support. If Members had any fear that the Bill would lead to a lowering of the standard of medical education or any laxity on the part of medical practitioners they might dismiss the thought. They might leave that question entirely in the hands of the medical men who in such a matter were thoroughly well able to take care of themselves. He had a great admiration for medical men. The medical man was usually the very best man in the parish, he did more unpaid work than any professional man he knew and more for the poor. He did not believe that Parliament need have any fear about the standard of medical education being lowered, but he did believe that if they had qualified midwives as they had qualified nurses many children would be born into the world better able to fight its battles and many women would be spared suffering and death. In his opinion all the objections to the Bill were objections in details which would properly be discussed before a committee.

Mr. RITCHIE said that there seemed to be a general consensus of opinion in the House in favour of the second reading of the Bill. Indeed, the only speech that he had heard which attacked the Bill root and branch was the speech of Sir Walter Foster who desired the House to take refuge in that familiar mode of getting rid of a subject which anyone wished to see shelved—namely, to ask the House to have more inquiry into the matter before dealing with it. The hon. Member really answered himself, because he told the House that there had been inquiry after inquiry upon Bill after Bill with regard to this subject and that Parliament had never got beyond inquiry. What was the reason why a principle which all were agreed upon had not yet got to the stage of effective legislation? It was because a certain number of gentlemen who were not opposed to a change in the law desired something much more than anything suggested in this Bill. More inquiry was wanted in order to make the Bill more drastic, more comprehensive, more complete. He ventured to say that these were the wrong lines altogether to go upon in this matter. They were all agreed that a great evil existed. That great evil was the fact that no person requiring the attendance of someone to help during this time of peril knew whether the woman who was called in was qualified to meet the difficulties of the situation. This was a modest Bill. It proposed to place at the service of everybody who required assistance of this kind the knowledge which would enable them to judge whether or not the person they called in was a person who might be trusted. He knew that there were some people who desired to go very much further and to say that the person who was called in must go through a very long course of training. That would mean that in a large number of towns and villages the poor would be deprived of all assistance of this kind. They would not be able to avail themselves of anything but the assistance of a medical man, which would be beyond the means of many, and besides the medical man might not be at call when wanted. Much more than expert knowledge was required at times such as these, and to pass a measure which would be so drastic as to prevent the poor being able to avail themselves of this assistance at the time of need would, in his opinion, be an unfortunate thing to do. There were matters of detail with regard to this Bill which might very well be considered in committee, but there were two perils which faced the House if it desired the Bill to pass. One peril was a select committee. It might be taken for granted that a select committee would, at any rate for the present session and probably for many sessions to come, be the grave of this Bill. There was another peril and that was the effort, well-meaning effort, to make the Bill very stringent. If an attempt was made to alter the Bill from the simple Bill which it was now to a complex Bill that again would prove the grave of the Bill. In this measure they had a simple remedy, with nothing heroic about it, for what everybody admitted to be a great evil. Let them not refuse to take this because it did not go the whole length which some of them desired. It had been very carefully considered by his hon. friend who had devoted so much time and attention to it and by large numbers of ladies and gentlemen who had

taken the greatest interest in the matter for many years. They all of them had the desire that this Bill should pass, although many of them thought that it did not go far enough. He hoped that the House would give the Bill a second reading and send it to a tribunal which would deal with it without delay and enable the measure to become law during the present session.

Mr. CAINE asked the promoters to make clear whether the body mentioned in Clause 4 was the Incorporated Midwives Institute. He knew of no such institute; he had asked for information about it but he had got none. Indeed, he did not believe that any such institute was in existence.

Mr. HEYWOOD JOHNSTONE replied that it was a body which had been in useful existence for a considerable number of years. The House might be quite certain that it would not have got its charter of incorporation from the Privy Council, from which it would necessarily come, unless it were a responsible body and a body engaged in doing good work.

The amendment for the rejection of the Bill moved by Sir JOHN TUKE was negatived without a division, and thereafter the motion for the second reading was agreed to, also without a division.

Mr. HEYWOOD JOHNSTONE moved that the Bill be referred to the Grand Committee on Law.

Sir WALTER FOSTER moved as an amendment that it be referred to a select committee. He argued that this form of committee would give the Bill a more thorough examination than could be given to it by the Grand Committee.

Sir JOHN TUKE seconded the amendment.

Mr. T. P. O'CONNOR, supporting the amendment, said that he had no thought of meeting the Bill in a spirit of malignant or obstructive criticism, because he approved its principle; but while that was so he remembered the proceedings in the Grand Committee before and he could not conceive a more uncompromising person than Mr. Heywood Johnstone during these proceedings. The hon. Member had got this Bill so much upon his mind that he regarded anyone who offered any criticism upon it as breaking some sacred or Divine law and he doubted whether on this occasion he would get very much consideration from the hon. Member in the Grand Committee. His own view was that it would not be against the passage of the Bill if it were referred to a select committee.

Mr. HEYWOOD JOHNSTONE said that he had served on many select committees, and not one of the Bills which had been considered by them had been placed on the statute-book. He therefore opposed the idea of a select committee in this case.

Mr. GRIFFITH BOSCAWEN spoke in favour of reference to the Grand Committee.

As in the former case, the amendment was not pressed to a division.

The Bill accordingly was referred to the Grand Committee on Law.

THE METROPOLITAN WATER-SUPPLY.

II.[1]

THE LAMBETH WATERWORKS COMPANY: SOME QUESTIONS FOR THE PRESIDENT OF THE LOCAL GOVERNMENT BOARD.

THE arrangements of the Lambeth Waterworks Company are unsatisfactory in more than one respect.

1. There is a deficiency of reservoir capacity.
2. The filtration area is insufficient.
3. Constant water service is not given to all those who have the right to demand it.

1. It is a matter of common knowledge that years ago the ordinary water of the Thames was used as a beverage. At the present time, however, it is not generally looked upon as suitable for that purpose. It is true that before the Llandaff Commission Professor Dewar, F.R.S., in giving evidence on behalf of the metropolitan water companies, said (Jan. 17th, 1899) that he would not object to drink unfiltered Thames water. But there are men who are employed to drink sewage effluents to prove their purity. It is not necessary to dwell on this matter. It is well that people should weigh the facts for themselves. At the present time the metropolitan water companies are not allowed to supply crude river water for human consumption. The chief means adopted for its purification are sedimentation and filtration. The Water Examiner in his last annual report (1900–1901) explained to the President of the Local Government Board the utility of storage reservoirs. It may be worth while to quote these remarks, which are to be found on page 247 of the Thirteenth Annual Report of the Local Government Board: "The fact that the impurity of the water in the rivers is so largely increased during periods of flood renders it of great importance that there should be sufficient provision of subsidence and storage reservoirs to enable the necessary daily supplies to be delivered during such periods, while keeping the intakes closed. Such provision is essential for securing uniformly effective filtration. The area of the available filters should also be sufficiently large to enable the necessary supply to be collected when the passage of the water through the material is sufficiently slow effectively to filter the worst water which circumstances may render it necessary to deal with." It is instructive to compare the relative reservoir capacity of the West Middlesex Waterworks Company with that of the Lambeth Company. In taking the West Middlesex Company as a standard of comparison it is not to be assumed that the arrangements of that company are perfect or that the water supplied by them is of ideal quality. It is not. Excellent water is supplied by the Kent Company. The customers of the New River Company have rarely cause to complain. Of the other companies the arrangements of the West Middlesex Company are the best. It happened that when the company not only paid its full statutory dividend and had also paid its back dividends, it was discovered by the directors that new works were required to ensure thorough efficiency. This discovery synchronised ("by some odd coincidence," as Lord Llandaff put it[2]) with the last payment of the back dividends. Improvements were then, in fact, effected in the company's works, and as far as the shareholders' pockets were concerned there was no reason why these should not be done. The undertaking indeed was brought to a state of comparative efficiency, although not to a state of such efficiency as to secure a supply of water equal in quality to that of the New River Company. The Lambeth Company has been less fortunate as a business concern and the old works have remained much as they were. The table given below, which is compiled from the December report of the Water Examiner, shows the average daily amount of water supplied during the month, the estimated population served, the storage reservoir capacity, and the filtration areas of the West Middlesex Company and the Lambeth Company respectively.

—	Daily average amount of water supplied in gallons.	Estimated population.	Storage reservoirs.		Filter-beds, area in acres.
			Area in acres.	Capacity in gallons.	
West Middlesex	20,565,429	650,734	11¾	397,500,000	22½
Lambeth ...	26,168,039	764,481	31	128,000,000	12½

It is evident at a glance that although the amount of water which is distributed by the Lambeth Company is greater than that which is distributed by the West Middlesex Company, the reservoir capacity of the Lambeth Company is less than one-third of that of the West Middlesex Company. The figures, as given in the Water Examiner's report, show that whereas the West Middlesex Company has a storage capacity sufficient for the wants of its customers for a period of 18·7 days the Lambeth Company has sufficient for only 4·9 days. Enough has been said to show that the Lambeth Company is deficient in its reservoir capacity.

2. The filtration area is insufficient and in the case of the Lambeth Company the offence is the more serious because the storage reservoirs are deficient in capacity. Water which has undergone a prolonged process of sedimentation becomes comparatively pure, the filter-beds have therefore less work to do. When, therefore, a water company has a reservoir capacity insufficient to ensure a sedimentation of the impurities of the river water it becomes the more necessary that the filtration area shall be ample. It cannot be too strongly insisted upon that the smaller the sedimentation

[1] Article I. appeared in THE LANCET of March 1st, 1902, p. 614.

[2] Feb. 14th, 1899. Fifty-second sitting of the Llandaff Commission.

area is the larger the filtration area must be to ensure the removal of foreign matter. The Lambeth Company, as we have seen, is not only deficient as to its reservoir capacity, but the filtration area is very inadequate. Whereas the West Middlesex Company has a filtration area of 22½ acres to treat something under 21,000,000 gallons of water daily, the Lambeth Company has only a filtration area of 12½ acres in which to treat over 26,000,000 gallons daily. During the month of December, 1901, according to the monthly report of the Water Examiner, "the water of the Lambeth Company exhibited the deepest average tint of brown." The brown tint is observed by looking through the water contained in a two-foot glass tube; it represents foreign matter or dirt and is usually said to be chiefly of vegetable origin. The brownish tint which is to be observed in Thames flood water is familiar to most people. It is some of this matter which is distributed by those of the metropolitan companies which do not adequately treat the river water by the methods of sedimentation, or filtration, or sedimentation and filtration.

Dr. Thorpe, the analyst to the Local Government Board, reported that on Dec. 30th last the Lambeth Company's water was "very faintly opalescent," and that it "contained a considerable amount of organic impurity." Taking the average amount of organic impurity in a given volume of the Kent Company's water during the nine years ending December, 1876, as unity, the proportional amount contained in an equal volume of water supplied by the Lambeth Company on Dec. 9th last was 2·4—that is to say, nearly two and a half times greater. On Dec. 30th, 1901, the amount was 5·3—that is to say, more than five times the standard, and no less than double the amount contained in the water distributed by the company on Dec. 9th. How is this to be accounted for? The answer is not doubtful. The problem may be solved in the light of what has been said and by a study of a table given in the Water Examiner's report for December, 1901 (page 4). Daily observations on the state of the Thames water are made by the engineer of the Chelsea Company and these records are given in tabular form. The facts are these: From Dec. 1st to the 12th the state of the river water was good, on the 13th it was indifferent, from the 14th to the 17th it was bad, and on the 18th and again on the 25th it was indifferent. From the 26th to the 30th it was bad. It is evident that the present arrangements of the Lambeth Company in regard to sedimentation and filtration are so defective that in a period of flood the water distributed becomes brownish in colour and that the amount of organic carbon which it contained is more than doubled.

3. Constant service is not given to all those who have a right to demand it. In December, 1901, four of the metropolitan companies professed to give constant service to all their customers; and of the supplies given by the other companies, the Kent, the New River, and the Southwark and Vauxhall companies gave constant service to 95·9 per cent., 95·7 per cent., and 93 per cent. of their customers respectively. The Lambeth company gave constant service to only 77·5 of its clients.

Has the attention of the President of the Local Government Board been called to the fact that it is of great importance that the metropolitan water companies should possess subsidence and storage reservoirs having a capacity sufficient to enable them to secure uniformly effective filtration?

Has the attention of the President of the Local Government Board been called to the fact that in December, 1901, during a period at which the Thames was in flood, the Lambeth Waterworks Company distributed water which was of brownish colour and which contained more than five times the amount of organic impurity of that of the "standard" adopted by the Water Examiner to the Local Government Board?

Has the President of the Local Government Board communicated with the Lambeth Company on this matter or taken any steps in regard to it? If so, with what results?

Is the President of the Local Government Board aware that less than 78 per cent. of the customers of the Lambeth Company have constant water service?

NOTIFICATION OF CHICKEN-POX.—On Feb. 24th the Yeovil Rural District Council resolved that chicken-pox should be added to the list of notifiable diseases.—The Radstock (Somerset) Urban District Council arrived at a similar decision on Feb. 28th.

COUNTY OF DURHAM MEDICAL UNION.

THE half-yearly meeting of the members of this union was held in the Town Hall, Sunderland, on Feb. 11th last, Dr. EDWARD JEPSON (Durham), the President, being in the chair. There was a large attendance of members, amongst those present being Dr. James Murphy (Sunderland), the Vice-President; Dr. J. F. Armstrong (South Shields), Mr. J. Arthur (Wingate), Mr. A. W. Attwater (Whickham), Dr. J. Charles (Stanley), Dr. Alfred Cox (Gateshead), Dr. A. Holdsworth Davis (Sunderland), Mr. E. H. Davis (West Hartlepool), Mr. W. H. Davis (Low Fell), Dr. E. W. Diver (Shotley Bridge), Mr. W. Galloway (Low Fell), Mr. A. T. Harrison (Sherburn Colliery), Dr. W. Hay (Sunderland), Dr. John Hern (Darlington), Mr. K. C. Hill (Jarrow), Dr. R. S. Hubbersty (Sunderland), Mr. A. S. Jaques (Gateshead), Dr. William Jaques (Washington), Mr. A. E. Legat (Sunderland), Mr. J. W. Mackay (Pelaw), Dr. Charles F. G. Mann (Washington), Dr. L. S. F. de R. Norman (Jarrow), Dr. N. F. Rowstron (Sunderland), Dr. A. Smith (Whickham), Dr. J. W. Smith (Ryton-on-Tyne), Mr. Robert Stuart (Durham), Dr. John Taylor (Chester-le-Street), Mr. D. F. Todd (Sunderland), and Mr. James Waterston (Sunderland).

The PRESIDENT opened the meeting by intimating the receipt of letters from several members who were unable to be present and then he referred to the fact that since the annual meeting the union had lost two of its members by death—namely, Dr. D. Wingate (Easington) and Dr. A. Reid (Blackhill), the latter under very painful circumstances. [Mr. J. ARTHUR of Wingate, interposing, mentioned that a third member, Dr. W. Nesbitt of Thornley, had recently died.] The President further stated that with a view to increase the membership every practitioner in the county had been invited to the present meeting, and he hoped that if any strangers should happen to be present they would feel that they were cordially welcome.

On the motion of the PRESIDENT, seconded by Dr. ARMSTRONG, votes of condolence with the families of Dr. Wingate, Dr. Reid, and Dr. Nesbitt were passed unanimously.

Dr. James Boyle (Fencehouses), Dr. W. G. Thompson (Sunderland), and Dr. W. G. T. Mecredy (Nettlesworth) were elected members.

The treasurer's statement to date showing a balance of £72 16*s.* 4*d.* was submitted and adopted, and a balance of £52 18*s.* due to the secretaries was ordered to be paid.

A report of the Council was read and reports were made by representatives from the districts of Stanley, Chester-le-Street, Sunderland, Jarrow, Hartlepool, and Darlington. Some discussion then took place upon the motion adopting the reports of the Council and local committees, in the course of which Dr. HERN stated that the Darlington practitioners had recently made a request to the friendly societies of that town for the payment of 4*s.* per member and 2*s.* for juveniles and asked for some guidance as to the steps which should be taken in the event of a refusal to agree to the demand. The feeling of the meeting was that each local district should deal with this question in the way and when it thought best, but that the minimum fee for adults must be 4*s.* per member, and many members were averse to any lower rate being accepted even for juveniles.

Dr. COX (Gateshead) made a report as to the meeting with the Direct Representatives on the General Medical Council held in Newcastle-upon-Tyne on Oct. 26th, 1901, which he thought would be productive of good, and a vote of thanks was accorded to him for his services in connexion with the matter.

After further discussion the reports were adopted, and it was resolved, on the motion of Dr. ARMSTRONG, seconded by Dr. MANN, that the report of the Council, which contained several interesting items, should be printed and circulated.

Reference having been made to the alleged employment of unqualified assistants by members it was resolved on the motion of Dr. COX, seconded by Dr. MURPHY—

That any member known to have in his employment an unqualified assistant be warned that the matter will be reported to the General Medical Council and that it will be the duty of the union in the interest of the profession to take the same steps as would be taken in the case of a non-member.

In accordance with notice given it was moved by the PRESIDENT and seconded by Dr. WILLIAM JAQUES—

That any medical man who shall knowingly meet in consultation any practitioner who is actively opposed to the union shall himself be considered as opposed to the union.

This motion was carried unanimously.

It was also resolved on the motion of the PRESIDENT, seconded by Mr. E. H. DAVIS—

That in the opinion of the union the payments made by insurance companies for medical examinations are totally inadequate.

Considerable discussion on the subject then took place and it was resolved—

That the subject of the payment of fees for examinations for life assurance be referred to the various local committees for consideration and report to the Council, and that after such reports have been received communication be opened with the Northumberland and Newcastle Medical Association with a view to concerted action in the counties of Durham and Northumberland.

It was ordered that copies of a table prepared by the secretaries of the fees at present paid by certain life assurance companies should be printed and supplied to the local committees.

Dr. MANN drew attention to the exorbitant rates of commission charged at some collieries for the collection of the fortnightly payments to the medical officers, and after some discussion, in which it appeared that the rate varied from 5 to 10 per cent., whilst at some collieries no commission at all was charged, the following resolution was passed :—

That the attention of owners and managers of collieries and works in the county be drawn to the exorbitant rate of commission charged at some places for collecting doctors' subscriptions from workmen with a recommendation that where charged at all the rate should not exceed 5 per cent.

A discussion took place in reference to the difficulty experienced by practitioners in obtaining serum rapidly and suggestions were made that it should be supplied gratuitously, and on the motion of Dr. MANN, seconded by Mr. E. H. DAVIS, it was resolved—

That taking into consideration the great danger to the public health and the difficulty of procuring serum rapidly sanitary authorities be urged to supply serum to medical practitioners gratis or at cost price at the discretion of the medical officer of health.

Dr. ARMSTRONG raised the question of the additional and important duties which had devolved on medical men in connexion with cases under the Workmen's Compensation Act, and drew special attention to the fact that as a rule no payment was made to the colliery surgeons for attending post-mortem examinations and consultations on behalf of the owners, and, on the motion of Mr. E. H. DAVIS, seconded by Dr. COX, it was resolved—

That some representation be made to the Durham Coal Owners' Association and to the owners of collieries and works asking that a fee be paid to colliery surgeons for attending post-mortem examinations and consultations on their behalf.

A hearty vote of thanks to the President terminated a very interesting and successful meeting.

The members subsequently dined together at the Grand Hotel, Sunderland, the Mayor of Durham (Mr. R. T. Herring, J.P.) being one of the guests.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8455 births and 6633 deaths were registered during the week ending March 1st. The annual rate of mortality in these towns, which had been 20·6, 22·6, and 24·4 per 1000 in the three preceding weeks, declined again last week to 23·3 per 1000. In London the death-rate was 28·2 per 1000, while it averaged 21·1 per 1000 in the 75 other large towns. The lowest death-rates in the 76 towns were 10·6 in Aston Manor, 11·7 in Hornsey, 12·4 in Walsall, 12·6 in Leyton, 12·9 in Kings Norton, and 13·8 in Norwich; the highest rates were 27·3 in Great Yarmouth, 27·6 in Reading, 28·2 in London, 28·5 in St. Helens, 28·8 in Merthyr Tydfil, 29·3 in Hastings, and 29·4 in Plymouth. The 6633 deaths in these towns last week included 570 which were referred to the principal zymotic diseases, against 584, 525, and 581 in the three preceding weeks; of these 570 deaths 166 resulted from measles, 122 from whooping-cough, 90 from diphtheria, 84 from small-pox, 45 from scarlet fever, 34 from diarrhœa, and 29 from "fever" (principally enteric). No death from any of these diseases occurred in Hornsey, Bournemouth, Ipswich, Great Yarmouth, Burton-on-Trent, Handsworth, Birkenhead, Middlesbrough, or Sunderland; while the highest zymotic death-rates were recorded in Willesden, Tottenham, West Ham, Burnley, Huddersfield, and Stockton-on-Tees. The greatest mortality from measles occurred in Willesden, Tottenham, Brighton, Southampton, Northampton, Burnley, Huddersfield, and Rotherham; from scarlet fever in Wigan; from diphtheria in Willesden, Coventry, and West Hartlepool; from whooping-cough in Aston Manor, Wallasey, Liverpool, York, and Gateshead; and from "fever" in Devonport. 75 fatal cases of small-pox were recorded in London last week, seven in West Ham, one in Tottenham, and one in Swansea. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 1102, 1185, and 1321 at the end of the three preceding weeks, had declined again to 1309 on Saturday, March 1st; 379 new cases were admitted during the week, against 287, 390, and 502 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of the week was 2307, against numbers decreasing from 3137 to 2413 on the nine preceding Saturdays; 215 new cases were admitted during the week, against 277, 260, and 219 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 486, 681, and 885 in the three preceding weeks, declined again last week to 733, but were 203 above the average. Influenza was stated to be the primary cause of 103 deaths in London last week, against 40, 51, and 107 in the three preceding weeks. The causes of 92, or 1·4 per cent., of the deaths in the 76 towns last week were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Nottingham, Bolton, Bradford, and in 37 other smaller towns; the largest proportions of uncertified deaths were registered in Smethwick, Liverpool, St. Helens, Blackburn, Barrow-in-Furness, Sheffield, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 23·6 and 25·3 per 1000 in the two preceding weeks, declined again to 22·6 per 1000 during the week ending March 1st and was 0·7 below the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 17·3 in Paisley and 18·5 in Aberdeen to 24·2 in Greenock and 26·3 in Dundee. The 729 deaths in these towns included 23 which were referred to whooping-cough, 19 to measles, 13 to diarrhœa, 10 to small-pox, five to "fever," four to scarlet fever, and one to diphtheria. In all 75 deaths resulted from these principal zymotic diseases last week, against 66 and 81 in the two preceding weeks. These 75 deaths were equal to an annual rate of 2·3 per 1000, which was 0·3 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 20 in each of the two preceding weeks, rose last week to 23, of which seven occurred in Glasgow, seven in Aberdeen, five in Edinburgh, and three in Paisley. The deaths from measles, which had been 12 and 17 in the two preceding weeks, further increased to 19 last week, and included six in Glasgow, six in Dundee, three in Edinburgh, and two in Greenock. The fatal cases of diarrhœa, which had been 23, 16, and 22 in the three preceding weeks, declined again last week to 13, of which five were registered in Glasgow, four in Dundee, two in Aberdeen, and two in Paisley. The deaths from small-pox, which had been one, two, and seven in the three preceding weeks, further rose to 10 last week, and were all recorded in Glasgow. The fatal cases of "fever," which had been 10 and six in the two preceding weeks, further declined last week to five, of which two occurred in Glasgow, where the four deaths from scarlet fever were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 173, 211, and 224 in the three preceding weeks, declined again last week to 214, but exceeded by 30 the number recorded in the corresponding period of last year. The causes of 24, or more than 3 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·8, 25·7, and 33·3 per 1000 in the three preceding weeks, declined again to

28·6 per 1000 during the week ending March 1st. During the past four weeks the death-rate has averaged 27·9 per 1000, the rates during the same period being 26·5 in London and 22·3 in Edinburgh. The 208 deaths of persons belonging to Dublin during the week under notice showed a decline of 34 from the number in the preceding week, and included 13 which were referred to the principal zymotic diseases, against 11 in each of the two preceding weeks; of these, five resulted from whooping-cough, three from "fever," three from diarrhœa, one from measles, and one from scarlet fever. These 13 deaths were equal to an annual rate of 1·8 per 1000, the zymotic death-rates during the same period being 2·9 in London and 1·6 in Edinburgh. The fatal cases of whooping-cough, which had been two, three, and two in the three preceding weeks, rose again last week to five; the deaths referred to "fever," which had been two, two, and three in the three preceding weeks, were again three last week; and the fatal cases of diarrhœa, which had been two in each of the two preceding weeks, increased last week to three. The 208 deaths in Dublin last week included 35 of children under one year of age and 66 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a slight decline from the respective numbers recorded in the preceding week. Two inquest cases and five deaths from violence were registered; and 65, or nearly one-third, of the deaths occurred in public institutions. The causes of 12, or nearly 6 per cent., of the deaths in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Staff Surgeon William George Kynaston Barnes has been promoted to the rank of Fleet Surgeon in His Majesty's Fleet. Dated Feb. 27th, 1902.

The undermentioned Surgeons have been promoted to the rank of Staff Surgeon in His Majesty's Fleet:—Frederick William Parker, Philip Nicholas Randall, George Goss Borrett, Walter Henry Skinner Stalkartt, George Alexander Stuart Bell, and John Ambrose Keogh. Dated Feb. 21st, 1902.

Staff Surgeon H. Meikle has been appointed for service at R.N. Rendezvous, Spring-gardens.

IMPERIAL YEOMANRY (IN SOUTH AFRICA).

The Imperial Yeomanry Depôt: Captain E. T. Vint, Medical Officer, is granted the temporary rank of Major. Dated Jan. 1st, 1902.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel George Arthur Hughes, D.S.O., is granted the local rank of Colonel whilst acting as Principal Medical Officer at Hong-Kong. Dated Oct. 12th, 1900.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Major W. S. Cheyne to be Surgeon-Lieutenant-Colonel. Dated March 5th, 1902. Surgeon-Lieutenant J. P. Brown to be Surgeon-Captain. Dated March 5th, 1902.

IMPERIAL YEOMANRY.

North Somerset: The undermentioned officer resigns his commission:—Surgeon-Lieutenant J. G. D. Kerr. Dated March 5th, 1902.

VOLUNTEER CORPS.

Rifle: 1st Volunteer Battalion the Northumberland Fusiliers: James Graham Miller to be Surgeon-Lieutenant. 4th Volunteer Battalion the King's (Liverpool Regiment): Lieutenant Edward Lucas Hughes resigns his commission and is appointed Surgeon-Lieutenant. 3rd Volunteer Battalion the Prince of Wales's Own (West Yorkshire Regiment): Surgeon-Lieutenant R. G. Hann to be Surgeon-Captain. 2nd Volunteer Battalion the Prince of Wales's (North Staffordshire Regiment): Surgeon-Lieutenant F. N. Cookson resigns his commission; Edward Churchill Stock to be Surgeon-Lieutenant. 2nd Tower Hamlets: Surgeon-Lieutenant E. T. McDonnell to be Surgeon-Captain.

VOLUNTEER INFANTRY BRIGADE.

Staffordshire: Surgeon-Captain C. A. MacMunn, 3rd Volunteer Battalion the South Staffordshire Regiment, to be Brigade-Surgeon-Lieutenant-Colonel on appointment as Senior Medical Officer to the Brigade.

SOUTH AFRICAN WAR NOTES.

Surgeon-Captain George Davidson Laing, attached to the 5th Battalion the Imperial Yeomanry, was slightly wounded in the right leg during the action with Colonel Von Donop's column.

The following officers have been discharged from hospital to duty:—Major G. T. H. Thomas, R.A.M.C., Major C. J. Holmes, R.A.M.C., Captain W. T. Mould, R.A.M.C., and Civil Surgeons Ilott, Bell, Jensen, Brown, and Fleming.

Major C. W. R. Healey, R.A.M.C., and Lieutenant L. E. L. Parker, R.A.M.C., are on passage home.

Correspondence.

"Audi alteram partem."

FORSYTHE v. LAW.

To the Editors of THE LANCET.

SIRS,—In the recent trial Forsythe v. Law certain allegations were made against me, which, if true, would rightly expose me to disapproval, especially among my professional brethren. May I, therefore, point out certain things which were stated, or insinuated, and which were quite without foundation and absolutely untrue.

1. The plaintiff was in a dying condition when she came under my care. There was and could be no doubt that huge doses of morphia and especially chloral had been taken by or administered to her at that time. This was admitted by Dr. W. T. Law. It was also admitted that she had very grave heart disease and these drugs had produced a very serious condition of health. She had had an extra large dose of chloral just before I saw her, and on arrival at 62, Ladbroke-grove, this began to take effect to an alarming extent and she required very great care. This was successfully treated and then began the effects of withdrawal of the opium. I was quite prepared for emergencies; they did arise as I had anticipated and were successfully combated. The one great danger was, however, due to the condition of her heart, rendered more dangerous by the exhibition of chloral. I was supported in my treatment by Dr. George H. Savage, the eminent specialist, who, I think, is in a better position than any other man to know whether or not I was correct. He did not alter one single detail, but quite agreed that I was doing right in treating the case as I was. The allegation that I was not treating the case scientifically and successfully therefore falls to the ground. Dr. Law's own witnesses showed that.

2. It is asserted that force was used to remove her and that she was under restraint in what the judge, without a shred of justification, termed a madhouse. *No force was used whatever.* She came freely and without any undue persuasion. She was not under restraint, except that she was continuously watched and tended by a nurse. She was free to go out of the home if she wished to do so. The so-called madhouse was an ordinary medical and surgical nursing home. Dr. Law admits, and I agree, that she had certain suicidal tendencies due to the chloral; these we watched and they quickly passed off. She expressed gratitude to me for stopping the morphia on many occasions.

3. Mr. Bankes, K.C., asked the judge to note the word "we" in my answer, "We did not think it wise to let her be put into the witness-box." He was quite aware that "we" meant that another doctor and I had examined her and considered it unsafe for her to appear. I need not give that doctor's name; he may not wish it, but the certificate signed by him was put in. Mr. Bankes wished it to appear to the judge and jury as if I were a party to the trial; that I deny absolutely and he was not justified in making that allegation. At the very first I told Dr. Law to try to avoid the scandal and exposure which a trial would mean to him. I did so entirely in his interests. It was no business or interest of mine whether the trial came off or not, but I all along hoped it would not come off. I had nothing to do with it except in so far as I was called upon to examine and make notes on prescriptions submitted to me for that purpose. I was bound on oath to find fault with these. They were almost all without directions of any kind—a most dangerous and unprofessional way of

prescribing poisonous and powerful drugs under any circumstances, especially in such huge doses and to a woman not responsible for her actions.

4. Mr. Bankes attempted, but most miserably failed, to connect me with an attempt to entrap Dr. Law into a consultation with the family solicitor. I need hardly do more than deny that; it is such an absurd allegation and so absolutely without foundation, and with the evidence before him a very unjustifiable thing for a man like Mr. Bankes to attempt.

Dr. Law and I were perfectly friendly; our meeting was friendly, our parting was friendly. After the consultation I expressed to him when shaking hands a hope that all would be settled satisfactorily. Dr. Law himself asked me to accompany him to the house. I did so. At the door of the house I was asked to come in to the interview. I did so. I took no part or interest in the interview; it was no business of mine. I did say Dr. Law's prescriptions were, to my mind, very injudicious, but "fishy" is a word I never used. I had no possible reason for being antagonistic to Dr. Law any more than I had for being the contrary to Miss Forsythe. The whole thing has been most distasteful and hateful to me, but, in my opinion, I could not act in any other way than I did. And I absolutely deny any and all the allegations made against me by Mr. Bankes. I am sorry to have written at such length, but I think this explanation necessary.

I am, Sirs, yours faithfully,

Ladbroke-square, W., March 1st, 1902. JAMES KIRKLAND.

THE STUDY OF THE HISTORY OF MEDICINE.

To the Editors of THE LANCET.

SIRS,—In the *British Medical Journal* of Nov. 23rd, 1901, it was suggested by Dr. M. G. Biggs that a society should be formed for the study of medical history, and in the following issue Dr. D. C. Lloyd-Owen uttered a further plea for the inclusion of the subject in the medical curriculum.

Having allowed a considerable interval to elapse it became apparent upon inquiry that nothing further had been done in the matter, and since the acceptance by the Royal College of Physicians of London of the FitzPatrick endowment of a lectureship of medical history had excited a quite unusual amount of interest in the subject it seemed to me a mistake to allow such an opportunity to pass.

In this spirit I ventured to bring the suggestion to the notice of several of those whose names—by authorship or otherwise—have become associated with the subject, and the scheme has already met with the approbation and support of Dr. J. F. Payne, Dr. W. H. Allchin, Professor A. Macalister, Mr. D'Arcy Power, Mr. Charles Williams, Dr. E. T. Withington, Dr. Lloyd-Owen, Dr. Arthur J. Hall, Dr. J. Stokes, Dr. Biggs, and Dr. A. H. Robinson.

It has been objected by some that there are already so many societies that it is doubtful whether there is room for another; that their multiplication tends to starve existing ones; and that the subject might well be discussed in any of these. But in spite of the quarter whence these objections come I am by no means convinced of their soundness.

With reference to the first objection, I am hopeful of its being practically refuted by succeeding in the endeavour to form a society similar in its objects to that recently established in France—the study of the history of medicine and the allied sciences considered from the multiple point of view of the evolution of doctrines and institutions, biography, bibliography, and documentary research. Are we always to remain behind our continental neighbours in this speciality? National vanity alone should negative the objection, for if such a society can thrive in France, why not in England? In the second place, the fact remains that the subject is very rarely discussed in any of the existing societies and the reason is not far to seek. The number of those who take a real and lasting interest therein is comparatively small. In the provinces they are generally only to be found far apart from each other, and there, as in London, a paper upon some topic allied to medical history read at one of the societies' meetings is by no means sure of gaining the approbation, if the attendance, of members. For it must be generally conceded that the present apathy of the bulk of medical men with reference to the history of their profession constitutes a gross anomaly. There is no professorial chair of the subject in any of our universities; it is included neither in the schedules of education nor examination—even as an optional subject—at any of our medical schools; and there is no existing society which makes it a speciality.

Having already taken the initial steps towards the formation of such a society, I venture to place the scheme before the profession and to ask for further support.

I am, Sirs, yours faithfully,

GEORGE C. PEACHEY.

Brightwalton, Wantage, Feb. 17th, 1902.

GREY HAIR AND EMOTIONAL STATES.

To the Editors of THE LANCET.

SIRS,—In his article on "Grey Hair and Emotional States," published in THE LANCET of March 1st, p. 583, Dr. Robert Jones refers to the connexion of grey hair with certain states of the nervous system. That such connexion exists there can be no doubt. We can, I think, speak more definitely and say that abnormal greyness is an infallible index of some defect in the nervous system—a defect which may range from comparative slight instability, manifesting itself as mere nervousness, to one so pronounced as to culminate in such grave disorders as angina pectoris and insanity. This statement is founded upon an examination of a large number of cases extending over several years, and it is because I am sure that it embodies a truth of considerable practical value to the physician that I am venturing to draw attention to it here.

But what, it will be asked, *is* abnormal greyness? We shall best answer this question by enumerating the characters of normal greyness. Between the normal and the abnormal there is, of course, no sharp dividing line—the one runs imperceptibly into the other—but, speaking generally, we may say that the chief features of normal greyness are: (1) it does not come on before, say, the age of 35 years; (2) it is symmetrical; (3) it begins in certain regions, preferentially the temples (so named on account of this very fact) spreading thence; (4) the blanching progresses gradually; (5) the blanching on the scalp does not proceed decidedly in advance of that on the face.

We are now in a position to give the features of abnormal greyness: (1) Premature blanching of the hair is the most important sign of it, and the earlier the greyness appears the greater the abnormality—thus it is greater in one who turns grey in his twenties than in one who does not begin to go grey till in his thirties; (2) asymmetrical greyness is so well recognised to be due to defective nervous action that I need not further insist upon the fact; (3) greyness which does not begin in symmetrical foci spreading thence, but affects the whole scalp or beard equally in all its parts, is, unless it progresses slowly, generally abnormal; (4) rapid blanching is always abnormal; and (5) when the whole of the hair on the scalp is decidedly grey, while that on the face retains its colour completely, the condition is abnormal. We may frequently observe this condition in men in their early thirties or early forties. I have never observed the exact converse of this, though it is quite common for men to grow more rapidly grey in the beard than in the scalp; this I do not regard as abnormal.

These, Sirs, are, in my opinion, the marks of abnormal greyness, and when any one of them is pronouncedly present we may infer the existence of nervous instability.

I am, Sirs, yours faithfully,

Wimpole-street, W., March 2nd, 1902. HARRY CAMPBELL.

To the Editors of THE LANCET.

SIRS,—Dr. Robert Jones has drawn attention to this subject in an interesting paper in THE LANCET of March 1st. There are cases of localised blanching of the hair which illustrate the influence of nervous changes. I do not now refer to the white hairs sometimes found in long-standing cases of neuralgia, but to cases of whitening of the eyelashes and eyebrows in connexion with sympathetic ophthalmia and spontaneous irido-choroiditis. A number of these cases have now been recorded.[1] I saw one case of this kind in a girl, aged 15 years, who, when first seen, had been blind for four years from severe inflammation of the eyes unconnected with injury. The history was clear that the eyelashes and in part the eyebrows had become

[1] See Transactions of the Ophthalmological Society, vol. xii., p. 29.

white after the eye trouble had set in. These cases are certainly rare and it has been stated that the whiteness of the eyelashes is a mere coincidence. This I do not believe and I think that the neurotic origin of the blanching in these cases is supported by evidence derived from comparative pathology. Mr. Beddard in his book on "Animal Coloration" writes (pp. 19–20): "There is certainly evidence that coloration has some relation to the distribution of the underlying nerves. Mr. Allen has stated that the white marks on the head of the tiger correspond to the area of distribution of the infra-orbital nerves. The nerves terminate in or near the skin, and it is clear that there must be some connexion between nerve-supply and coloration from the fact that in a hedgehog whose spines were white the nerves in connexion with the muscles for contraction of the skin were greatly diseased. There are plenty of other pathological facts of a like nature."

Another question follows—What nerves are implicated when blanching of the hair occurs? Do they belong to the sympathetic or to the cerebro-spinal system? In favour of the former we have Pouchet's experiments quoted by Professor Semper in his book "Animal Life," p. 96. These experiments proved that the changes already observed by Lord Lister (then Mr. Lister), and alluded to by Dr. Jones, were brought about through the agencies of the optic and the sympathetic nerves. I fully agree with Dr. Jones that "the influence of nervous changes upon the hair has not been fully worked out."

I am, Sirs, yours faithfully,

Londonderry, March 3rd, 1902. E. DONALDSON.

THE UNIVERSITY OF DURHAM AND THE MEDICAL CURRICULUM.

To the Editors of THE LANCET.

SIRS,—In your account of the proceedings of the recent special session of the General Medical Council you quote from the Confidential Report of the Special Committee on the Curriculum (February, 1902). I beg to inform you that Paragraph VI. of the Recommendations of the Committee, viz.: "That the University of Durham, by recognising all the courses of study which are recognised by all the licensing bodies in Schedule A of the Medical Act, 1858, accepts many courses of study in the subjects of physics, chemistry, and biology which have been recognised by the Conjoint Board of England, but have not been approved by the Medical Council," &c., was drawn up on imperfect information, and that for the last five years the University of Durham has only accepted instruction in chemistry, physics, and biology received at the following institutions:—(*a*) The recognised medical schools in Great Britain and Ireland; (*b*) the Durham College of Science, Newcastle-upon-Tyne, and the other university colleges in the kingdom. The report of the committee was therefore amended, before being presented to and adopted by the Council, by Paragraph VI. of the Recommendations of the Committee being completely withdrawn and the University of Durham placed on the list of the examining bodies which conformed to the General Medical Council's requirements.

I am, Sirs, yours faithfully,

GEORGE HARE PHILIPSON,
Representative of the University of Durham on the General Medical Council.

March 3rd, 1902.

*** Sir George Philipson will see that although we published the Recommendations of the Special Committee as they were originally drawn up we also stated that the reference to the University of Durham was deleted.—ED. L.

"WHAT'S WHAT?"

To the Editors of THE LANCET.

SIRS,—I regret to trouble you again concerning "What's What" and the references to London medical men in its Appendix, but your article on "Publicity for Medical Men in the Lay Press" in THE LANCET of March 1st, p. 604, and the correspondence which you publish between Sir Anderson Critchett and myself at p. 618 in the same number leave me no alternative.

First, I beg to inform you that the letter which I wrote to Sir Anderson Critchett was intended to be private, that I gave him no authority to publish it, and that I consider his doing so (without any permission from or notice to myself) to be simply unjustifiable.

Next, Sirs, I beg to inform you that whatever paragraphs may or may not be withdrawn from the future editions of "What's What" you are mistaken in saying that I have already withdrawn those which have been lately in question. What alteration I may make in the future remains to be seen. At present my action is purely confined to the expression of regret that any words of mine should have caused personal annoyance to those members of the medical profession to whom they refer and a specific promise to certain gentlemen that I will omit their names from any future edition. I do not in the least admit or consider that I have written anything to which exception could reasonably be taken or that there is a single word in the paragraphs in question for which any apology is necessary. The whole point of the matter lies in the fact that advertisement is so common nowadays that professional men are morbidly sensitive to even the breath of a suspicion that they can be guilty thereof, and that, as I have realised, from the letters written to me by them, the extent of this morbid sensitiveness, I have thought it courteous and desirable to inform them that I am sorry that it should have been aroused by my action.

To return, Sirs, to your article. I hope that you will allow me to deny, in the strongest manner, that I desired "to do some persons a good turn by lauding them at large." I desired nothing of the kind. I had not the remotest idea of doing these persons—these surgeons and doctors—a good turn by lauding them. Not one of them is a personal friend, several of them I have never seen, and my only connexion with them has been that which I stated, when I said that I had had actual experience (either in my own person or in those of relations and intimate friends) of their capacity and skill.

I should have wished, Sirs, to answer the subsequent arguments in your article, which deal with the main point at issue—the only one with which the public has any real concern; but to do so would be to occupy your space to a greater extent than you would probably desire or permit; and I will therefore publish my reply in another medium. I think that there will be no difficulty in showing that the balance of advantage to the public lies in publicity and not in secrecy; that the only persons who have anything to fear from the former are the incompetent and fraudulent; and that both the medical man and his clients have everything to gain by being brought into direct communication with one another. At present you will observe that, by your own admission, the medical and *quasi*-medical men who are recommended to the public are the less desirable members of the profession, a fact which in itself goes far to prove the desirability of some alteration.

With apologies for the length of this letter, the last with which I propose to trouble you,

I am, Sirs, yours faithfully,

Manchester-square, W., March 4th, 1902. HARRY QUILTER.

*** We do not see how Sir Anderson Critchett could guess that Mr. Quilter meant his letter to be private, nor can we understand why Mr. Quilter should resent its publication, especially in view of the publication by other medical men of his correspondence with them.—ED. L.

THE MIDWIVES BILL.

To the Editors of THE LANCET.

SIRS,—Referring to your leading article on "The Midwives Bill" in THE LANCET of March 1st, p. 606, there was only one way to avoid the errors which you deplore and that was by introducing a "nursing Bill" at the commencement of the session, and I need not remind your readers that the whole of the candidates for Direct Representation on the General Medical Council last autumn pledged themselves to do so, and I need hardly say that they have failed to do so. The material for such a Bill was in their hands and Parliament must have given it their attention, but there being nothing before the House but the Registration Bill it was naturally taken for granted that the Bill in question had the general approval of the profession. Nor need the General Medical Council complain. The Council was warned both before and at the date of the election that "the Privy Council would make short work of their recommendations," and so it has happened, and in the new Midwives Board the Council will have a powerful rival. That is why I did my best to impress this fact on the candidates.

Of course, the Midwives Bill makes no provision for nursing. It never did. All it does is to "protect title" after registration and so it is on all fours with the Medical Acts. It is clear that Parliament will *never* protect medical, surgical, or midwifery practice so that in the end quackery (that is, unlicensed practice) will destroy the medical profession. It is not a pleasant prospect for those seeking to enter the ranks of legitimate medicine, and, with the exception of those entering the public services and of the holders of certain appointments, the rank and file have a poor look-out. Unqualified practice is rampant throughout the country, and I am at present taking charge of a practice in a northern county where two unqualified men in the relationship of principal and assistant do the leading practice. It is not an exceptional case, and I can imagine the disgust of the new midwife when she finds herself in keen competition with the ignorant and dirty Gamp. Indeed, her only hope of salvation is in becoming a drudge to the men who still cultivate cheap midwifery.

I am, Sirs, yours faithfully,

Liverpool, March 3rd, 1902. ALEXANDER MCCOOK WEIR.

THE DECAY OF AUSCULTATION AND THE USE OF THE BINAURAL STETHOSCOPE.

To the Editors of THE LANCET.

SIRS,—Dr. Charles W. Chapman's remarks in THE LANCET of March 1st, p. 618, on "The Decay of Auscultation and the Use of the Binaural Stethoscope" lead me to suggest another perhaps not very generally-recognised advantage peculiar to the binaural variety. I have found that if, while percussing the chest, the stethoscope be left hanging in the ears, with the chest-piece dangling close over the part struck, the notes produced are considerably and in many cases very helpfully, amplified. The true path of the sound is not readily recognised by the ears, and it is only when one stops up the stethoscope end that one is forced to the right conclusion. I am, Sirs, yours faithfully,

Cheltenham, March 3rd, 1902. EDGAR G. TREVITHICK.

THE DISSEMINATION OF KNOWLEDGE CONCERNING VACCINATION.

To the Editors of THE LANCET.

SIRS,—The suggestion of Dr. Herbert W. G. Macleod in THE LANCET of March 1st, p. 618, on "The Dissemination of Knowledge concerning Vaccination," is an excellent one, but he appears to be unaware of the fact that something is already being done in this matter. I may, however, remark that it is not very easy to obtain audiences for lectures on such a subject as vaccination, even at a time when it is so prominently before the public as it is at present, except in one of two ways—either by putting up a lecturer to decry vaccination, as the Anti-vaccination League so frequently does, when those who arrange the lecture will also take some trouble to collect an audience, or by giving pro-vaccination lectures through the agency of organisations which are in touch with the class of people one wants especially to reach. Such agencies are mothers' meetings and the systematic lectures on health given by the lady teachers under the various county councils. Ever since its foundation the Jenner Society has been in increasing relations with both sets of these agencies and has given them all the assistance in its power in the way of suggestions, literature, diagrams, &c., and I doubt whether there is any more effective way of carrying on this form of educational work. I may add that the society has a series of lantern slides which it lends out for such gatherings and which have been found very useful. If Dr. Macleod were to see the large correspondence on this subject alone with which the Jenner Society has to deal he would find that the ground is not so unoccupied as he appears to think. Still, there is plenty of room for more effort, and I have done my best to invite the coöperation in it of medical officers of health, as Dr. Macleod suggests, who, when a favourable opportunity occurs for doing so, are in a position to give valuable help in this matter.

There is another direction of a cognate kind in which the Jenner Society has found considerable scope for activity, and that is in connexion with the numerous public lectures, debates, and discussions on the vaccination question which have during the last five or six years, and just now more than ever, been taking place in all parts of the country. My experience in the correspondence with which I have had to deal in this matter has shown me that the supporters of vaccination are generally at much disadvantage when compared with their anti-vaccinationist opponents from a want of appreciation of what I may call the controversial perspective of their subject. The anti-vaccinationist attack has been organised by men who are keen enough to see what are the most effective points that they can make, and even where those who undertake the attack have no real knowledge of their subject they can repeat the "patter" which is provided for them in a way which puts their less adroit antagonists often at considerable disadvantage; in fact, it is the story of our experience in South Africa over again in another form. Boer "slimness" is more than a match for British "frontal attacks" until the Britisher learns from the tactics of his opponents that in this as in other matters *fas est ab hoste doceri*. To facilitate this desirable result the Jenner Society has provided a series of notes for lecturers and debaters on the subject of vaccination which I have reason to think have been found useful.

I am, Sirs, yours faithfully,

FRANCIS T. BOND, M.D. Lond.,

March 4th, 1902. Honorary Secretary, Jenner Society.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

To the Editors of THE LANCET.

SIRS,—I send you a few statistics concerning the passes and rejections of the Final Fellowship examinations of the above College as they may be instructive to those of your readers who have followed my correspondence in your journal under the heading of "A Dangerous Principle."

Year.	Pass.	Reject.	Total candidates.
1897...	5	7	12
1898...	18	5	23
1899...	10	4	14
1900...	35	0	35
1901 (up to February) ...	18	1	19 *

* One examination.

I can hardly expect that the President, Vice-President, and Council of the College will so far relax the reticence they have hitherto observed towards the letters of mine which appeared in THE LANCET, but should they do so an explanation as to whether the "Charter" witnesses were present at any Fellowship examination in 1900 would be of much interest.

It seems hardly possible to believe that of 35 candidates for Fellowship in a given year the average answering should be so rich in success as was the case in 1900, unless, indeed, there were some explanation which the ordinary practitioner had overlooked. I am, Sirs, yours faithfully,

Dublin, Feb. 24th, 1902. S. WESLEY WILSON.

ACUTE SUFFOCATIVE PULMONARY ŒDEMA.

To the Editors of THE LANCET.

SIRS,—I am obliged to Dr. Auld for his reference to Laennec. In preparing my lecture on "Acute Suffocative Pulmonary Œdema"[1] I did not, unfortunately, think of consulting the writings of the famous French physician, although I might easily have done so, as both the original and the translation are on my book-shelves. However, had I come across the paragraph quoted by Dr. Auld it would not have interested me in this connexion, as I cannot see that it has any except the most general bearing upon the affection with which I was dealing. The quotation in Dr. Auld's letter, with the exception of the italics in the last sentence of it and two words "when" and "but" in the middle of it, is to be found in Forbes's Translation, fourth edition, 1834, p. 81.

[1] THE LANCET, Jan. 11th, 1902, p. 73.

Now I am convinced that the affection described by Laennec in his paragraph on "acute suffocative catarrh of adults and children" is not the affection which I endeavoured to describe in my clinical lecture. It may be frankly admitted that all acute suffocative affections of the lungs, as Dr. Auld indicates at the end of his letter, present certain general resemblances to one another, but this by no means implies that they are the same either in degree or in kind. If Laennec's description be compared with that in my lecture important differences will be found which, to my mind at least, conclusively prove that the two accounts do not refer to the same affection.

Laennec is dealing with an acute suffocative catarrh "affecting the whole, or a very large portion, of the mucous membrane of the lungs"; I am dealing with acute suffocative pulmonary œdema. The duration of the catarrh "is from 24 to 48 hours, or at most some days." The duration of the suffocative œdema in my cases was on an average about six hours. In suffocative catarrh, at the end of 24 or 48 hours, or at most some days, "either the patient dies, or expectoration commences and puts an end to the suffocation, and the disorder then follows the progress of a simple acute catarrh." In suffocative œdema "almost simultaneously with the onset of the dyspnœa—a most important diagnostic point—expectoration of a perfectly white, finely frothy, watery sputum begins." In acute suffocative catarrh "while the suffocation lasts there is little cough" (I use here the words in my copy of Forbes's translation, which are a little different from those in the quotation), "and the expectoration, if any, is altogether pituitous or fluid." In acute suffocative pulmonary œdema "the frothy fluid seems to flow up the trachea and is expelled with a 'hawk,' as if clearing the throat, but there is no cough in the ordinary sense of the word."

The affection described by Laennec is a matter of days; that described in my lecture is a matter of hours. In my first case there was no cough or spit either before or after the suffocative attack had passed off, which it did in about six hours; the suffocation and the profuse expectoration were cotemporaneous and both ceased together. These are differences as to the essential nature of the two affections which, to my mind, no degree of general resemblance can reconcile, and which convince me that I have not mistaken cases of acute suffocative catarrh for acute suffocative pulmonary œdema.

I am, Sirs, yours faithfully,

Glasgow, Feb. 24th, 1902. JOHN LINDSAY STEVEN.

THE PREVENTION OF WATER-BORNE DISEASES IN THE ARMY.

To the Editors of THE LANCET.

SIRS,—On reading your leading article on the above subject in THE LANCET of Nov. 30th, 1901, p. 1507, I was reminded of the hugely beneficial effects of the cream separator in prolonging the keeping time of butter. This machine must separate not only cream and milk but also cream and germs. It seems permissible, therefore, to wonder whether some adaptation of the centrifugal principle might not prove efficient as regards water and germs. Such an apparatus would probably be less cumbersome and more rapid in its action than any yet proposed—given only its efficiency.

I am, Sirs, yours faithfully,

Hamilton, Victoria. R. W. HUGHSTON, M.B. Melb.

A METHOD BY WHICH DEPOSITION OF MOISTURE ON THE LARYNGEAL MIRROR MAY BE PREVENTED WITHOUT THE AID OF HEAT.

To the Editors of THE LANCET.

SIRS,—I have no knowledge of the "crayon anti-buée" to which Dr. Walker Downie referred in THE LANCET of March 1st, p. 589, but the desirable result of preventing the deposition of moisture on a laryngeal mirror may readily be brought about by rubbing the mirror with a piece of damp soap. The smeared surface thus produced is polished by rubbing off the film of soap with a soft cloth. A mirror so prepared will not become clouded if breathed upon for some time (over an hour provided the tongue does not touch it)—a point of some value if a lengthy examination has to be made. The fewer instruments with which a practitioner has to be provided nowadays the better, and as soap is always at hand the simplicity of the process has much to recommend it. Why soap should have this effect I do not pretend to explain, nor do I know who was the first to apply it for the purpose mentioned.

I am, Sirs, yours faithfully,

March 4th, 1902. ETONENSIS.

ISOLATION HOSPITALS AND WELL-TO-DO PATIENTS.

To the Editors of THE LANCET.

SIRS,—Will you please tell your readers accurately and fully what would happen if anyone in what are called the "upper classes" catches small-pox? I myself, through the accident of birth and industrious sires belong to the class who toil not, and I have no idea, nor has my medical attendant, whether in the event of my catching small-pox I shall be able to enjoy the illness at home, or whether I shall be hauled out of bed and carted by force to a Metropolitan Asylums Board small-pox hospital. Nor if allowed to remain at home do I know who will be allowed to attend me or what precautions will be enforced to prevent the spread of the infection. No doubt I ought to know, but I find that nobody seems to know. If you are good enough to reply will you also tell us what would happen if the same state of things occurred outside the limits of the Metropolitan Asylums Board's area. No object in giving my name, so allow me to sign myself— Yours faithfully,

March 2nd, 1902. SILVER-SPOON.

*** To a certain extent our correspondent's question has been answered in a leading article which appeared in THE LANCET of Feb. 1st, 1902, discussing isolation accommodation. A member of the upper classes catching small-pox will be well advised to do as the medical officer of health advises. A sensible medical officer of health would never insist upon the removal of a patient to an isolation hospital who could be effectively isolated in his own house and properly attended by his own medical man. Outside the jurisdiction of the Metropolitan Asylums Board the circumstances would be altered by the fact that there might be no isolation hospital. If there were one, the medical officer of health to the urban or rural authority would be the best person to advise whether an individual case should be nursed at home or not. We may add that our correspondent is too modest, for if his sires had not placed him on the top shelf he would soon have got there by himself.—ED. L.

AN INDIAN MEDICAL STUDENT'S GRIEVANCE.

To the Editors of THE LANCET.

SIRS,—I have for some time been seeing a notice put up on one of our university boards about the "West African Medical Staff" services. I did not pay much attention to that till I have seen THE LANCET of last week (Feb. 8th). In that under the heading "The West African Medical Staff" I notice that among other qualifications a European parentage is necessary for the candidature for the services. This excludes those who are, though British subjects, yet fortunately or unfortunately not born of European parents; this therefore excludes Indian medical students as well. Now do I wish to draw the attention of the British public, specially of those class of peoples who are of unbiased mind—I mean the members of the medical profession—to the injustice thus done to the Indian medical students of this country. Why should those of us who have come up to this country, been educated in the distinguished universities, studied, worked, been examined and passed together alongside the white men, I am at a loss to understand, be refused a right which our fellow students will enjoy? Shall I understand, then, that this is a distinction of colour and nothing else? It is all very good to extend a hand to accept a help from India in time of need. We do not grumble at it, we do not refuse it, though famine and pestilence have become our daily visitors. Everyone knows how assistance in various shape from Indian princes and Indian contingents was utilised in the present South African

war. It is also known how the Indian soldiers upheld the British prestige in distant China. Is this the way, then, the Colonial Office intends to repay the services of India? This is surely not the means by which the British public can expect to gain the confidence of the Indians.

I am, Sirs, yours faithfully,

AN INDIAN

Feb. 17th, 1902. (a Member, University Edin.).

MAIDSTONE AFTER THE EPIDEMIC.

(BY OUR SPECIAL SANITARY COMMISSIONER.)

A Comparison between the Sanitary Work done before and after the Typhoid Fever Epidemic of 1897: the Necessity of Better Sanitation Vindicated, while the Contamination of the Water-supply remains Problematical.

MAIDSTONE suffered from so severe an epidemic of typhoid fever in 1897 that all sanitary measures taken in this town have become matters of more than local interest. Everyone must be anxious to know what is being done to prevent the recurrence of so terrible an epidemic. Indeed, Maidstone now constitutes an object-lesson for all students of hygiene. It will be remembered that Maidstone was considered an exceptionally healthy town. For the 10 years preceding the epidemic the average annual death-rate was 14·54 per 1000 on a population of 33,830, while the mean death-rate for England and Wales was 18·57 per 1000. The epidemic commenced in September, 1897, and by Jan. 1st in the following year 1786 cases had been notified in the town, 107 in the County Asylum, and 45 in the Maidstone Rural District. The epidemic, however, was at its height from Sept. 11th to Oct. 16th, and the three worst weeks were those ending on Sept. 25th, Oct. 2nd, and Oct. 9th, when the number of cases notified for each were 544, 529, and 246 respectively. The average zymotic death-rate for Maidstone had been 1·68 per 1000, but in 1897 the death-rate from the seven principal zymotic diseases rose in consequence of the epidemic of typhoid fever to 5·52 per 1000. The general impression prevailed at the time that the epidemic was caused by the contamination of the Farleigh water-supply, though the Eberth bacillus was never found in that water. The districts affected corresponded, however, with the distribution of that particular water-supply; but in the special reports and map published in THE LANCET at the time it was shown also that the districts were on high levels ranging from 100 feet upwards. Exceptionally and in one part of the town only the Farleigh water was distributed to houses built on levels as low as 40 feet; but here, strange to say, the epidemic did not follow the water-supply, though it prevailed near at hand, but in the houses that were on a higher level. This suggested that there were other causes than the water-supply and among these was the fact that the branch sewers went up to the higher levels and might act as ventilating shafts for the main collectors that were at the lowest level. These main collectors were not self-cleansing, a considerable number of the branch sewers were very badly built, while the domestic drainage was in a deplorable condition. Many of the closets had no flushing apparatus and were not properly connected with the street sewers. The subsoil was often polluted by broken and leaking drains. Further, though Maidstone is so small a town it had its slums and its poor living in badly ventilated, dirty, and overcrowded houses. All these sanitary defects required as much attention as did the question of water-supply, though the tendency was to hold the water as being solely responsible for the disaster that had befallen the town. Indeed, I was politely informed at the time that my arguments, though ingenious, were quite at variance with the dictates of modern science and that the idea of considering typhoid fever as a sewer fever was out of date. Still I persisted in comparing bad sanitation to the powder and a contaminated water-supply to the spark that produced the explosion, and I urged that it was quite as important to study predisposing causes as to investigate the more immediate reason of the outbreak.

It is now satisfactory to note that these arguments, though energetically repudiated, have nevertheless produced good effects. Theorists are welcome to continue to argue that the water and the water alone was to blame if at the same time they tacitly admit the contrary by energetically striving to improve the public sewers and the private drains. Moreover, I also urged that by so doing they would prevent other epidemics besides those due to typhoid fever, and this contention was confirmed by the fact that an epidemic of diphtheria followed closely upon that of typhoid fever. But the excessive prevalence of diphtheria has now ceased, and this at the very time that improved methods of ventilating the sewers were introduced. So that, in spite of the bacillus which we were told must have been in the water though it was never found there, something can still be said in favour of good drainage as an effective means of preventing epidemic disease. Let us, therefore, now see what has been done in Maidstone in this respect since the great epidemic.

First and foremost there stood the financial difficulty, aggravated by the fact that the epidemic has cost the town council £17,496, notwithstanding the Mansion House Relief Fund which had raised the sum of £27,918. Nevertheless, and even before the sanitary inspectors could examine premises and serve notices, a great number of private householders took alarm, had their drains overhauled, and in many instances found it necessary to relay them, to add ventilating pipes, and to improve the closets. Many thousands of pounds were thus spent of which there can be no public record. The authorities, however, wisely determined not to trust to this laudable display of private enterprise, but they immediately after the epidemic was over commenced a systematic inspection of every house in the town. The drains in each case were tested if possible by the water test. Then four street sewer ventilating shafts, 35 feet high, were placed in connexion with the sewers in 1897, before the epidemic had quite ceased.

To show the wholesome effect which the epidemic has had in stimulating sanitary work I will take some of the more important items one by one. Thus, during 1896, the year before the epidemic, drains were reconstructed, or were provided where they did not exist, to 200 houses. In 1897 the authorities appear to have been too occupied with the epidemic to do very much work of this description, for the number of houses so treated amounted to only 156. On the other hand, the epidemic was no sooner over than great activity in this respect is recorded, for new drains were provided to 476 houses in 1898, to 416 houses in 1899, and to 303 houses in 1900. The number of drains repaired and cleaned was 436 in the year before the epidemic, 340 during the year of the epidemic, and no less than 2050 in the year after the epidemic. In 1899 drains were repaired and cleaned in 681 houses and in 1900 in 574 houses. The water-closets that were repaired and cleansed in 1896 numbered 300 and in 1897, 250, but for the three years following the epidemic these figures rose to 798, 572, and 525. 40 new water-closets were constructed in 1896 and 20 in 1897. Then for the three years following the epidemic these figures were increased to 84, 84, and 105 respectively. One of the grievances especially complained of was that a great many water-closets were not provided with water, but could only be flushed by hand, the inhabitants having to pour water from pails or jugs down their closets. In 1896 flushing apparatus was affixed to 348 water-closets, and this was done in 284 cases during the year of the epidemic. Here, again, we have a notable illustration of the practical effect produced by the typhoid scare, for in the following year a flushing apparatus was provided to 911 closets, in 1899 to 823 closets, and finally in 1900 to 644 closets. Only three old drains were trapped and ventilated from the sewer in 1896 and six in 1897. But in 1898 this was done in 31 instances, though only in one case during 1899 and in 26 cases in 1900. The gullies in the yards were also in a very defective condition and in 1893 trapped stoneware gullies were substituted for old and defective brick or bell-traps in 233 cases. This was done in 180 cases in 1897. Then, after the epidemic, this grievance is also taken actively in hand and in 1898 no less than 620 stoneware gullies are provided. The next year 629 more are laid and 389 in 1900. All these items may be grouped under the heading of "Domestic hygiene." Coming now to the point where the sanitation of the private dwelling merges into that of the street or public sewer, the new glazed drainage pipes laid in 1896 amounted in all to 4625 feet in length and to precisely the same length in 1897. But the difference for the year following upon the epidemic is very characteristic, for the total length of new hardware drain-pipes laid amounted to 18,427 feet. Nor is this all. Where the drain-pipes run under houses and especial risks are incurred cast-iron pipes are now used, and 1387 feet of this sort of

piping were also laid in the course of the year. Nor did the work stop here. In 1899 almost equal activity was shown, as 17,410 feet of new glazed pipe drainage and 500 feet of cast iron pipes were laid. Finally, in 1900 the new glazed pipe-drains laid measured 13,793 feet and the cast-iron pipes 523 feet. If the seven items mentioned above and qualified as domestic hygiene are grouped together they amount for the two years 1896 and 1897 in all to 2794 sanitary improvements effected. If, on the other hand, the same items are taken for the two years following upon the typhoid fever epidemic it will be found that 7776 similar improvements have been carried out. Nor is this all; for, though the figures for the third year show some falling off, they still remain very much higher than those that preceded the epidemic. Then, again, when dealing with the connexion of houses with sewers and the sewers themselves, it will be seen that in the years 1896 and 1897 there were in all 9250 feet of new glazed pipes laid; while during the following two years new pipes to the length of 37,714 feet were employed, and this includes 1887 feet of cast-iron pipes which constitute an extra precaution not generally applied before the epidemic. These figures speak well for the activity of the Maidstone sanitary authorities and show that they have taken the lesson of the epidemic to heart. But if the epidemic was caused exclusively by the contamination of the water-supply, why take all this trouble to improve the domestic and public drainage? House-owners and public authorities are not prone to incur a large expenditure just on the off-chance that it may be of some little use. It is evident that, in spite of all that was said to the contrary, the warning given in these columns that the contamination of the water-supply was probably not the only cause of the epidemic has been more generally heeded than was publicly admitted.

During the year that followed the typhoid fever epidemic there were but 35 cases of this disease notified, resulting in two deaths. On the other hand, there were 240 cases of diphtheria. This exceeded the highest previous record which amounted to the 211 cases that had occurred the previous year, thus adding the stress of a minor epidemic of diphtheria to the terrible distress caused by the 1786 cases of typhoid fever. Nevertheless, the death-rate for the year 1898 only amounted to 12·82 per 1000, which, however, if compensation is allowed for age and sex, constituted a mean death-rate for Maidstone of 14·3 per 1000, and this latter figure may be compared with the mean death-rate of 17·6 recorded for England and Wales during the same year. The mortality from diphtheria at Maidstone was not high. It was equal to 12·9 per cent. of the cases.

Before the typhoid fever epidemic the authorities had objected to the expense of frequent analyses of the water-supply. Their attitude was very different after the epidemic. The Cossington supply was analysed 52 times, that of the Boarley 53 times, the Ewell 17 times, and the Mid-Kent 52 times during the year 1898. The Farleigh supply was absolutely suppressed and the Ewell water was only delivered for a time in the Barming district. Mixed waters were analysed on 21 occasions and of 13 samples from private wells 12 bore evidence of organic pollution. Thus it will be seen that there is no longer any stinting so as to save expense in water analyses. Mr. M. A. Adams, who was then medical officer of health and public analyst, reported that, speaking generally, the quality of the public waters had been good. In regard to the supplies from the chalk, that of Boarley was excellent and that of Cossington was not so good. The Ewell is a steady, good, greensand water, but apt to contain too many nitrates and phosphoric acid. The Mid-Kent water also came from the greensand but was much softer, and sometimes it did not contain a trace of nitrogen or ammonia. There was, however, a difficulty in getting a sufficient quantity as the season had been exceptionally dry. During the same year the sanitary authorities reported as to the condition of unhealthy areas. It was found that the average annual death-rate during the previous 10 years among the inhabitants of Upper Bonny's Yard amounted to 25·2 per 1000. This was nearly double that of the town taken as a whole, and therefore forcibly suggested faulty local conditions. 39 out of 52 inhabitants never reached the age of manhood. The deaths from diseases of the respiratory organs were in the proportion of 38·5 per cent. of the total of deaths. The houses in this yard are back-to-back and are very damp and squalid.

During the year 1899 the epidemic of diphtheria continued and there were 213 cases, resulting in 27 deaths. There were also 21 cases of typhoid fever and the average death-rate was 15·5 per 1000 of the total population. Nevertheless, the average death-rate from the seven principal zymotic diseases only amounted to 1·16 per 1000 though the annual average for the previous 20 years was equal to 1·783 per 1000. Further reports were given by the medical officer of health on the housing question. Eight houses in Kingman's Yard were described as being in a wretched state, with damp, dangerous walls and staircases and windows that were too small. Two closets were improperly placed and two others were full to overflowing. There were 33 persons living here near to stagnant, filthy accumulations of house refuse, with defective pavement in the yards and one out of three gullies blocked. This property was described in the report as being unfit for human habitation. In Dann's Yard there were 10 houses with no water-supply to the closets and with insufficient space and ventilation. The cubic space of the rooms in Thomas's Yard averaged 650 feet. The walls were crumbling away and the cubic space per inhabitant varied from 77·6 cubic feet, 99·4, and 103·3, to 458·8 and 544·4. Had the rooms been properly apportioned there might have been 300 cubic feet per bed in three out of the six houses measured. The windows were only two feet six inches square and there was no through ventilation in four of the houses. In Temple Court there were 15 houses, many of them back-to-back and all unsuited for human habitation.

In November, 1899, Mr. Adams retired and Dr. Charles Pye Oliver succeeded him as medical officer of health. Dr. Oliver, in his report for the year 1900, states that though the average annual death-rate for East Maidstone equalled 16·8 per 1000 during the previous 10 years, it rose to 18·1 for the year 1900. Taking both East and West Maidstone the death-rate for the entire town was 15·81 per 1000, as compared with 18·3 per 1000 for the United Kingdom. There were 28 cases of typhoid fever during the year and 50 cases of diphtheria. The death-rate from the seven principal zymotic diseases fell to 0·77 per 1000. During the course of the year some improvements were effected in regard to the insanitary condition of some of the poor quarters mentioned above and the overcrowding was abated. But it must be confessed that so far as the housing problem is concerned no bold effort has been made to grapple with the difficulty. A little tinkering may be noticed here and there. It is the better-class property that has been vastly improved by house-to-house inspection, followed by the reconstruction or repairs of the domestic drainage in every part of the town.

(To be continued.)

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

Plague Officers and the Indian Medical Service.—The Plague Epidemic.—The Victoria Memorial Scholarship Fund for Training Native Midwives.—The Famine Relief Fund.—The Census for Assam.—The Cemetery Question in Calcutta.

THE following medical officers who have rendered good service in connexion with plague have been selected for admission to the Indian Medical Service. Commissions have been offered to Dr. Walsh, Dr. Horton, Dr. Lewis, Dr. Gloster, and Dr. Justice, and nominations for commissions have been made to Dr. Beach, Dr. Hunt, Dr. Haydon, Dr. Muat, Dr. Smith, Dr. Hills, Dr. Starkey, Dr. Sanderlands, Dr. Knapp-Barrow, Dr. Jameson, and Dr. Murray. They will all be graded immediately below the batch of Indian Medical Service officers who next arrive from Netley. These officers have been recommended by the respective Governments under which they have served, and they were of the requisite age when they commenced their plague duties. It will be only fair if appointments are offered to other plague officers who have done well but who are not otherwise eligible for the Indian Medical Service.

Again a further increase is reported in the mortality from plague. Throughout India there were 12,192 deaths last week, as against 11,445 for the previous seven days and only 3415 for the corresponding week of last year. Bombay city, the Punjab, the North-West Provinces, and Bengal show great increases, the published figures being:—Bombay city, 408 deaths; the Presidency, 3822; Karachi, 44; Madras Presidency, 574; Calcutta, 82; Bengal, 822; North-West

Provinces, 1182; the Punjab, 4102; Mysore State, 587; Hyderabad State, 195; and Kashmir, 371. The latest returns for Bombay city and for Calcutta show that the outbreaks in these two cities are rapidly developing. The disease is still very virulent in Karachi, Poona, and Bangalore. The evidence with regard to inoculation is very conflicting. In the Punjab plague is raging where inoculation was extensively carried out last year, while, on the other hand, at Poona there were 6681 inoculations last year with the occurrence of only 11 cases and seven deaths amongst the inoculated. After all what are 7000 inoculations in a population of nearly 100,000? This week over 12,000 deaths have been recorded and yet only 10,706 doses of vaccine were sent out from Bombay. Inoculation is pushed in a few places, but is absolutely neglected in others.

The Victoria Memorial Scholarship Fund for training native women as midwives has been a great success. Over six lakhs of rupees have been raised and the fund is now closed. It has been decided that each locality shall profit by its own subscriptions, and the committee is re-allotting the interest from local contributions for the purpose of training midwives in the various districts. Already in Hyderabad a class has been started, and in Mysore, Rajputana, Gwalior, Travancore, Hulwa, Gondal, and Chamba young *dais* (nurses) have come forward to be trained in the female hospitals of those States.

The committee of the Indian Famine Relief Fund recently met in Calcutta and resolved to close the fund and to make over the balance (some six and a half lakhs of rupees) to the Indian Peoples' Fund.

The final census report for Assam shows the population to be 6,126,343—an increase since the last census of 11·8 per cent. One or two districts, however, were enumerated for the first time. Of the above population 725,844 persons are described as foreigners—that is to say, they were born out of Assam. This shows, at any rate, that the immigration is considerable.

A great controversy has recently been raging in Calcutta concerning the Christian cemetery. More ground is urgently required and the health officer and others have advocated a fresh cemetery in the suburbs. Considerable opposition, however, has been made to this, chiefly by the Church parties, who desire an extension of the existing grounds. Apart from sentiment there can hardly be two opinions upon the undesirability of cemeteries in the heart of a city. It is unfortunate, also, that in a city like Calcutta a properly-constructed crematorium has not been provided. The Hindus burn their dead as soon as possible after death, generally within a few hours, and the exigencies of the climate compel Mahomedans and Christians to bury their dead very speedily. There is a growing feeling amongst the Christian community that cremation is the preferable method for disposal of the dead. As these matters come under the administration of the municipality I consider the erection of a crematorium to be one of the reforms which ought to be undertaken without further delay.

Feb. 8th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Stanley Hospital.

THE committee's report for 1901 showed that 1105 persons had been treated as in-patients, with a total number of attendances of 57,218, or a daily average of 156. As many as 387 persons were brought to the hospital by the ambulance. Throughout the whole year the resources of the charity had been taxed to the utmost. All the available beds had been continuously occupied, and the staff had more than ever felt how limited the accommodation for in-patients was and how great was the necessity for opening the whole hospital; but the committee, under the pressure of the present large debt, had felt quite unable to face the extra annual expenditure that would be incurred by opening the closed wing. The new out-patient department had been found to work very satisfactorily, notwithstanding the fact that the out-patient and casualty work had been exceedingly heavy. Owing to the dearth of young medical men caused by so many having gone to the seat of war in South Africa the committee found it impossible to obtain at former salaries suitable candidates for vacancies on the resident staff. It was consequently placed in a position of difficulty, from which it was extricated by the generosity of Mr. C. J. Williamson, who promised to give £30 a year for five years to augment the salaries of the house surgeons. The expenditure for the year amounted to £5381, and the income, apart from the ex-Lord Mayor's hospital century fund (£948 12*s.*), was £3663, a decrease of £400 on the year 1900. Although an increase of £228 had been received from the Hospital Sunday and Saturday Fund and an increase of £77 in annual subscriptions, there was a falling-off of £610 in donations. In the matter of legacies the hospital had been again unfortunate, for out of all the handsome amounts distributed from this source it had received absolutely nothing during the past year, and only £50 in 1900. It seemed as if there were many who do not recognise the fact that the Stanley Hospital is one of the general hospitals of Liverpool and that it ministered to the necessities of a large and poor district otherwise unsupplied with gratuitous medical and surgical assistance. Starting the year with a debit balance of £4268, the ordinary expenditure had exceeded the ordinary income by £1736, against which £948 12*s.* had been received from the "Century Fund," leaving a debit balance of £5039. The committee urgently appeals to the charitably disposed for immediate help.

The Small-pox Epidemic: Vigilant Precautions in Liverpool.

The number of small-pox patients under treatment in the city hospitals remains at 44, no fresh cases being reported. A number of people, however, have been isolated for special observation. In order to be on the safe side the medical officer of health has, since the commencement of the outbreak, exercised the utmost vigilance to prevent a spread of the disease, and it may be taken as a fact that only about 25 per cent. of the persons isolated actually develop small-pox; but the precautions are so exact that a person who betrays the slightest suspicious symptoms is isolated for a period. Stations have been opened in some parts of the city for the performance of free public revaccinations, and it is a gratifying fact to record that the "conscientious objector" is a comparatively *rara avis* in this city.

The Bootle Borough Hospital.

The fifty-ninth annual report of this hospital for 1901 states that a slight outbreak of fever in the early months of the year interfered to some extent with the work of the in-patient department and necessitated the partial closing of the wards for cleaning and re-painting. The opportunity thus offered was taken advantage of to re-paint the entire building, to instal the electric light, to re-furnish the operating theatre, and to effect necessary alterations and improvements in the nurses' and servants' dormitories. The laundry plant had been renewed during the year. The accounts showed that after all the expenditure had been met the hospital debit balance was only £147. The committee recorded with deep regret the death of Mr. R. J. Sprakeling who for more than 30 years had been associated with the medical staff.

March 4th.

WALES AND WESTERN COUNTIES.

(FROM OUR OWN CORRESPONDENTS.)

Cardiff Infirmary.

IN spite of the exceptional efforts made by the ex-Mayor of Cardiff during his year of office and of others to place the finances of the Cardiff Infirmary upon a sound footing the managers have not yet succeeded in securing a sufficient income to meet the annual expenses. The expenditure during 1901 was £1815 more than the income received. There is no doubt that if the Cardiff working-men would only support the infirmary to the same extent that similar institutions are supported by their comrades in other large towns, such as Newport or Bristol, there would be ample means at the disposal of the managing committee. There were treated during last year 1663 in-patients and 14,282 out-patients by the staff of the infirmary.

Small-pox Hospitals.

A great deal of activity is being displayed in the provision of small-pox hospitals. The Mayor of Tenby has contributed £100 towards the cost of a temporary hospital for the borough, and the Portishead Golf Club has offered to the Portishead Urban District Council the pavilion of the club for use as an isolation hospital. The Whitchurch (Salop)

District Council has decided, upon the recommendation of the medical officer of health, Mr. M. Gepp, to erect tents for the purpose of isolating any cases of small-pox which may occur in the district.

Dog Muzzling.

The Board of Agriculture has issued an order requiring the muzzling of dogs in the boroughs of Cardigan and Carmarthen and in portions of the counties of Cardigan and Carmarthen and in the whole of the county of Pembroke.

Royal West of England Sanatorium.

The annual report of the Royal West of England Sanatorium at Weston-super-Mare states that 1144 men and 981 women were admitted to the institution during 1901, that 990 of the total number were discharged recovered, and that 672 left in much improved health. The expenditure for the year amounted to £3506 and the receipts to £80 less than this sum.

Beri-beri or Arsenical Poisoning?

At the last meeting of the West of England and South Wales Branch of the Incorporated Society of Medical Officers of Health Dr. Edward Walford, medical officer of health of Cardiff, read notes upon four cases of beri-beri which had recently occurred among European sailors who had arrived at the port of Cardiff. They left Rangoon on Sept. 12th, 1901, and 10 weeks later the first man was attacked, the three others falling ill in another three weeks, and upon arriving at Cardiff four weeks afterwards all four men were found to have typical symptoms of beri-beri. They were removed as soon as possible to the Seamen's Hospital and they all recovered. Specimens of hair were examined at the Cardiff Public Health Laboratory by Mr. Sugden, the assistant chemist and bacteriologist, and traces of arsenic were found in the hair taken from each patient. Acting upon the presumption that the disease was due to a micro-organism which after lying dormant had regained vitality in the heated atmosphere of the forecastle Dr. Walford considered that the patients suffering from the disease should be at once removed from the poisonous apartment which they were inhabiting, and that there should be a complete disinfection of all surfaces and articles which might retain infection, and he quoted Dr. Patrick Manson's opinion that "when patients are removed from endemic spots they at once begin to improve and may be out of danger in a few days, whilst those who remain in the endemic area most probably go from bad to worse and very likely die."

Health Reports.

In his annual report for the Stroud Rural District the medical officer of health, Dr. J. M Martin, states that the birth-rate during 1901 was 20·6 per 1000 and the death-rate 13 per 1000. The population of the district was 27,770. Among the 666 rural districts in England and Wales only 17 have a larger population. It is satisfactory to find that regulations under the Dairies, Cowsheds, and Milkshops Order and By-laws with respect to nuisances and new buildings, which have been under consideration by the district council for two years, are now only awaiting confirmation by the Local Government Board.—The death-rate in the borough of Aberavon in Glamorganshire, which has a population of 7553 persons, was 15·5 per 1000 in 1901.—The birth-rate in the Yeovil Rural District, where there is a population of 17,537 persons, was 23·3 per 1000 during 1901 and the death-rate was 14·3 per 1000.—Mr. A. R. Nicholls, the medical officer of health of the Langport Rural District, in his annual report, states that many of the occupied cottages in his district are barely fit for habitation, the ground floors being in some instances of trodden earth. The birth-rate in 1901 was 25·5 per 1000 and the death-rate was 19·1 per 1000.

Treatment of Imbeciles.

At a conference of the Somerset Poor-law and Rural District Councils' Association held at Taunton on Feb. 25th a discussion took place with reference to the separate accommodation of imbeciles and idiots. No definite resolution was come to upon the subject but the opinion of the conference appeared to be that such persons should not be treated in a lunatic asylum. It was suggested that they might be gathered from several unions into one institution which would not have to be built up to the requirements of the Commissioners in Lunacy, and the Langport Workhouse, which has accommodation for 300 inmates but is now only occupied by 50, was spoken of as one which might be adapted for such a purpose.

Hospital Sunday in Bristol.

It has been decided to distribute £1400 among the Bristol hospitals from the Lord Mayor's Hospital Sunday Fund. The collections amounted this year to nearly £1600.

The New Workhouse Dietary.

The average weekly cost per head of the inmates in the workhouse of the Wells Union for the half year ending Dec. 31st, 1901, was 2*s.* 9½*d.*, and for the corresponding period of 1900, before the new dietary scale was adopted, the average cost was 2*s.* 10½*d.* The workhouse accommodates 300 inmates.

Proposed Repeal of the Conscientious Objector Clause.

The Malvern Urban District Council has passed a resolution in favour of the repeal of Section 2 of the Vaccination Act, 1898, and has issued a circular letter to other district councils urging the adoption of a similar resolution. When this letter was discussed by the Chipping Sodbury Rural District Council the medical officer of health (Dr. Francis T. Bond) strongly urged the council not to acquiesce in the suggestion of the Malvern council, for he was of opinion that the section (which relates to the conscientious objector) was a very wise one in the interests of vaccination and had done practically no harm but a very distinct amount of good, for it had removed the possibility of a certain limited section of the community posing as martyrs. He declared that the actual number of exemptions under the section did not come to more than 5 per cent. of the children born in the country and they were obtained mostly in large centres where the agitation against vaccination had been most active.

Plymouth Borough Asylum.

At Plymouth, on Feb. 26th, Colonel W. L. Coke, the Local Government Board inspector, held an inquiry into the application of the Plymouth Corporation for power to borrow £40,000 for the extension of the borough asylum at Blackadon. It was stated that an enlargement of the institution was urgently required, for although the asylum was erected to provide accommodation for 200 patients as a matter of fact there were 280 patients at present. The proposed extension will enable the authorities to provide accommodation for 406 patients.

March 3rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Edinburgh and the Carnegie Trust.

THE University Court of the University of Edinburgh has now laid before the Carnegie Trust a statement regarding the more urgent needs of the University. This document commences by explaining that in order to assist the court in preparing the statement the senatus had been requested to offer suggestions as to the direction in which University extension was most required. The various faculties had accordingly considered their wants and had reported to the senatus which, in its turn, had sent in a report on the whole subject to the court. A representation on the subject had also been received from the General Council of the University. The statement then gives an account of the various legacies and donations which had been received by the University during recent years. These in the aggregate amount to £91,000, this sum not including numerous endowments destined to the founding of bursaries, scholarships, and fellowships. Notwithstanding all that has been done recently the University is still in need of large additions to its buildings, to its teaching staff, and for educational appliances. The more urgent needs of the University are then given and may be stated briefly as follows: 1. The court concurs in the opinion that the most urgent need of the University is a building for natural philosophy and engineering and agrees to ask the Carnegie trustees to set aside £8000 annually for five years as a contribution towards the fund which the court proposes to raise for the purpose of purchasing ground for the future extension of the University buildings and in the first instance for the erection thereon of class-rooms and laboratories for the teaching of natural philosophy and engineering. 2. The court and senatus agree as to the importance of increasing the efficiency of the University library and resolve to apply to the Carnegie Trust for a grant of £500 a year for five years to be expended on structural alterations

and on fittings in the library department and for an annual sum of £1500 for general and special library purposes. 3. They also agree to make application to the trust for a grant of £2500 in the coming year to be expended on equipment. The additions under this head are more immediately required in the laboratories and museums in natural physiology, chemistry, botany, zoology, geology, anatomy, physiology, pathology, and in clinical medicine and surgery and their special branches. 4. The court also regards it as important that provision should be made for the institution of research and other scholarships, chiefly in the faculties of science and medicine, and accordingly resolves to recommend to the Carnegie Trust that a sum of £1000 should be placed at the disposal of the court for that purpose for the forthcoming year. This sum would fall to be gradually increased in future years, but it may be expected that the requirements under this and paragraph 3, constituting together provision for the encouragement of scientific research and now stated at £3500, will not be materially altered. 5. It also agrees to submit an application to the trust for an annual grant of £4000 towards the maintenance and extension of the teaching and research work of the laboratories in the departments of physics, chemistry, botany, zoology, geology, anatomy, physiology, materia medica, pathology, public health, surgery, midwifery, tropical diseases, agriculture, and engineering, and towards the payment of the salaries of the demonstrators and assistants whose services will be required to meet the contemplated extension in the work of teaching and research. 6. The court is further of opinion that the following existing lectureships should be erected into professorships—viz., the lectureships in (1) French, (2) German, (3) applied mathematics, (4) ophthalmology, and (5) mental diseases. The court suggests that the trustees might annually set aside sums to be applied for the eventual endowment of new chairs. 7. The court is very desirous of instituting certain new lectureships in science, medicine, and commercial education, each of them for the tenure of five years, indicated in the relative ordinance of the Universities Commissioners; and it ventures, as in the case of the suggested new chairs (paragraph 7) to ask the trustees for information as to the manner in which they are prepared to aid in the establishment of such new lectureships. The above claims advanced by the court therefore involve the capital sum of £45,000 under paragraphs 1, 2, and 3, and permanent annual grants to the extent of £9000 under paragraphs 2, 3, 4, and 5. With regard to paragraphs 6 and 7 the court awaits the decision of the executive committee as to the amounts which it may feel able to advance towards these objects. The court would remark that if the capital sums above specified are granted by the executive committee the court will be prepared on the expiry of their period of payment to submit to the committee proposals for grants for a further extension of the buildings of the University and for other academic purposes. The court then makes a statement with regard to the number of students for whom instruction has to be provided and the amount at present voted by the court from the University chest towards that purpose. The average annual number of matriculated students for the last five years has been 2812. The average number of students annually during the same period in the faculties of science and medicine has been 1550. The matriculated students for the present year are 111 more than during the corresponding period of last year. The grants provided by the University for the financial year 1900–1901 were as follows:—

Stipends of lecturers	£3061
Stipends of assistants	6886
Laboratories and class expenses...	2206
Museums	400
Library...	2662
	£15,796

The University has practically no surplus income from which additions to those grants can be made for the purpose of extending the teaching in the existing departments or for the introduction of new subjects of study. The court regards the section of the trust under which application is made as intended to confer an enormous benefit on the universities of Scotland by providing means for their continuous development and it expresses the hope that the executive committee will be able to contribute to the University of Edinburgh a share of the income proportional to the numbers of the students and teachers and to the requirements of the subjects of study.

Aberdeen University.

The senatus of this University met at King's College on March 1st and decided that the graduation ceremony should take place on Thursday, April 10th. In connexion with the subject of honorary degrees the senatus resolved to offer the degree of LL.D. to Sir Thomas Barlow, Bart., M.D., F.R.C.P., B.Sc. Lond., K.C.V.O., physician to the King's Household.

The late Mr. R. J. Cheves, M.B., Ch.B. Aberd.

Much regret has been expressed in Aberdeen and district at the death of Dr. Cheves of Longside, who contracted pleurisy whilst visiting his patients and succumbed after confinement to the house for a few days. He was 25 years of age.

March 4th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox in Dublin.

AT the monthly meeting of the Corporation of Dublin on March 3rd a report was received from the Public Health Committee giving a detailed account of the recent outbreak of small-pox and of the precautions taken to prevent the spread of the disease. The report added that the three patients were convalescent and that in the belief of the committee all danger of a spread of the disease had passed. A deputation attended from the City Hospital for Diseases of the Skin in support of an application made by that body for a grant of £150 a year from the corporation funds. The matter was referred to the Finance Committee.

Health of Belfast.

At the monthly meeting of the Belfast City Council held on March 3rd it was reported that between Jan. 19th and Feb. 15th there had been notified 180 cases of zymotic disease—viz., 52 cases of typhoid fever, 44 of simple continued fever, 35 of erysipelas, 17 of diphtheria, 15 of membranous croup, 14 of scarlet fever, two of puerperal fever, and one of typhus fever. In the four weeks ended Feb. 15th there were 790 births registered in Belfast and 573 deaths, making a natural increase of 217. There were 41 deaths from zymotic disease, 86 from phthisis, and 183 from other diseases of the respiratory organs, making a total of 269 from the two latter causes. The annual death-rate from all causes was 20·8. On the whole the state of health of the city of Belfast continues fairly good and it is gratifying to be able to report that notwithstanding the prevalence of small-pox in London, Glasgow, and Liverpool, no case of this disease has so far been notified in Belfast.

County Down Infirmary.

From the report of this institution from Jan. 1st to Dec. 31st, 1901, I find that the total expenditure for the year was £1619 1*s*. There were 462 patients admitted, which with those remaining from the previous year, 38, made 500 in all. The average number of beds occupied daily was 35, and the average cost of each patient was 2*s*. 5½*d*. per diem. The number of extern cases was 513. After the payment of all accounts a balance to credit of £247 5*s*. 4*d*. remained.

The Irish Poor-law Medical Service.

The Council of the Irish Medical Association has brought under the notice of the senates and councils of the universities, medical colleges, and schools, the present condition of the Irish Poor-law medical service, in the hope that those intrusted with the provision of medical education may be induced to exert their influence to improve and reform this important public service in the interests of many of their present and future graduates and diplomates of medicine and surgery. The association begs the authorities of the Royal Colleges of Physicians and Surgeons and the Universities of Ireland to use their united influence to deter young professional men from entering this service until a minimum rate of remuneration has been fixed upon for Poor-law medical appointments, the salary in each case to be proportionate to the area of the district, and a reasonable one considering the onerous duties of the office. The average salary paid to dispensary medical officers represents a small fraction under £100 per annum, out of which he must pay all expenses necessary to the

discharge of his duties, and rent, taxes, horse, vehicle, servants, &c., so that practically no portion of his salary is available for his support, for which he has to depend on the small emoluments arising from registration and vaccination fees, averaging about £30 per year, together with whatever private practice the district may afford him. It is noted that in Bragan District, Monaghan Union, the medical officer is paid a yearly salary of £29 19*s.* 2*d.* for attending a district of 12,388 statute acres and with a population of 1964 persons, and his vaccination fees were for one year 8*s.* The medical officer of Portstewart District, Coleraine Union, has a salary of £43 0*s.* 1*d.* for a district with a population of 2761 and an area of 9116 acres, and for the year ended March 1st, 1900, his vaccination fees were 10*s.* There is no promotion in the service, no holidays as of right, no increment of salary no matter how long or efficient the medical officer's service may have been, no recoupment of official expenses however epidemics or other local conditions may increase them, and there is no pension, unless, indeed, the medical officer should be successful in begging as a favour that which he should have as a right. Under such circumstances is it strange that there are deep and lasting discontent and dissatisfaction in the ranks of the Poor-law medical service officers, and that they are determined to make an effort to have these truly anomalous conditions of the service rectified? It is recommended (1) that £200 per annum be fixed as the minimum salary for any dispensary appointment, and £120 per annum for any workhouse appointment, unless held jointly, when £300 should be the amount for both; (2) that all medical salaries should be subject to a quinquennial increment, either based on the civil service scale or at a fixed percentage rate; (3) that a yearly holiday of one month as a right should be fixed, with well-defined rules as regards the appointment and payment of a substitute; and (4) that there should be superannuation on civil service scale as a right. It is hoped that a united effort will at last be made to improve the Poor-law medical service of Ireland.

March 4th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The New Public Health Law.

THE new law on public health to which I referred in my letter in THE LANCET of March 1st, p. 624, was published in the official journal on Feb. 15th, 1902, and will henceforth be known in legislation by that date. As everybody knows the law has been under consideration for some 20 years, and its provisions have been altered over and over again, for the various committees which had it under consideration were exposed to a cross-fire from hygienists on the one side and politicians on the other, the latter of whom desired to avoid imposing on their constituents sundry expenses which would make them unpopular and which would place their re-election in great doubt. To-day, although the definite text of the law is published, it is easy to foresee the various difficulties which will arise in its vigorous application when the various centres of population refuse to carry out the regulations. With a view to economy the law creates no new official and the mayors of every commune are constituted as sanitary officers; but these mayors are elected by the people. It will be the mayor's duty to publish various sanitary rules and regulations which will deal with (1) sundry precautions to be taken against infectious diseases, and especially with measures for disinfection; and (2) various regulations dealing with the sanitary condition of houses, of furnished lodgings, and other dwelling-houses, whatever be their nature, and especially with the questions of the supply of drinking-water and the removal of dust and other refuse. If any mayor has not published his code of sanitary regulations within one year from the date of the publication of the law, the prefect shall publish one himself; and it is easy to see that, in the majority of cases, this is what will happen, for the majority of mayors in the little country communes have not the slightest idea of drawing up sanitary regulations. If the mayor issues his regulations and the prefect does not pass them the latter official can modify them after having given notice to the departmental hygienic council. This amounts to saying that the Government has tried to avoid the responsibility of measures which might make it unpopular among country populations and has striven to throw all the responsibility upon the mayors. Nevertheless, the mayor, in his quality as chief of the municipal police, will have to see that the regulations published are carried out, whether they come from himself or from the prefect. It is certain, however, that no mayor will have any authority to impose upon his constituents hygienic measures which will annoy them in any way, such as the destruction of insanitary premises, compulsory disinfection, or a rate for "*canalisation*" for a supply of drinkable water. The law has provided for the case of a mayor being obviously incapable, whether from ignorance or from ill-will; and within three years from a definite statement to this effect by the departmental hygienic council, the prefect will be able *ex officio* to draw up sanitary measures such as he considers will be useful—that is to say, he will be able to act on his own responsibility or else do nothing at all if the deputy representing the *arrondissement* should belong to the Government majority and should not wish to annoy his constituents. The prefect, however, cannot enforce these measures without having first referred the question to the Minister of the Interior who will, in his turn, submit it to the Consultative Hygienic Committee of France which will proceed to order a committee of inquiry. With the consent of these two committees the prefect will be able to put the commune under the obligation of carrying out the necessary works. If within three months these works are not carried out a decree of the President of the Republic in Council will authorise the prefect to have the works carried out at the expense of the commune; but, in order to compel the commune to enter the expenses for these works in the communal budget there must be another special decree passed on the matter by the Chamber of Deputies and by the Senate. It is easy to see that this complicated procedure will very rarely be put in action, especially in communes the deputies of which belong to the Government majority. The communes represented by members of the minority will thus be the only ones likely to see the sanitary regulations rigorously applied to themselves, according to the principle which, as a matter of fact, dominates the whole of French politics—viz., that the application of the law is simply a form of political oppression. It is obvious that where the law is strictly carried out there will be a violation of the rights of private property. One peculiarity of this new law is that it provides for *bureaux d'hygiène* to assist the mayors; but only in communes of 20,000 inhabitants and over, although communes of 2000 inhabitants which possess a bathing establishment are also provided with such *bureaux*. Sanitary measures relating to houses are not applicable except in communes of 20,000 inhabitants and over. This distinction is foolish, for there are many localities of less than 20,000 inhabitants where the population is wholly industrial in which the application of the rules as to the populations of the large towns would be equally indispensable. The regulations concerning vaccination or revaccination will probably be properly carried out, for public opinion has for some time been prepared for such a measure. "*Canalisation*" for drinking-water and for the construction of sewers will probably be more difficult to carry out properly. The Academy of Medicine within the next six months will publish a list of notifiable infectious diseases which every medical man will be bound to notify. This obligatory notification, which has already been laid down by the law of 1892, concerning the practice of medicine has not, up to the present, been strictly observed, and it certainly will be none the more so when medical men see that the result of their notification will be compulsory disinfection. Compulsory disinfection will be pretty easy in the large towns, but in the little towns and in the country where the departmental service is charged with the duty of seeing the law carried out it is probable that the measures will meet with violent resistance due to prejudices which will take a long time to overthrow. In this matter, as in so many points, the question of education comes in.

Chloroform Anæsthesia in Patients Affected with Morbus Cordis.

A discussion was commenced on Feb. 11th at the Academy of Medicine on the question of administering chloroform to patients with morbus cordis. M. Huchard, who opened the discussion, was of opinion that chloroform was the safest anæsthetic in cases of morbus cordis. Anæsthesia ought to be brought about gradually, but it should be profound before the operation began. The anæsthetist should be skilled and it was most important that he should give his whole attention to his duties. M. Berger supported M. Huchard. M. Brouardel, who spoke late in the discussion, related the results of 25 post-mortem examinations made on the bodies

of persons who had died under chloroform. In not even one was there any valvular lesion found. Three patients had hearts thickly overlaid with fat but without any muscular degeneration, while in only one case was there any definite fatty degeneration found. These results gave a certain amount of support to the contention of M. Huchard. Of 19 patients who died under chloroform 14 died before the operation had begun, four died during the operation, and one died after it was over. The elder Doyen had pointed out how often renal mischief was found in cases of death under chloroform. M. Brouardel, however did not consider that renal mischief was a contra-indication to the use of chloroform. Deaths of patients under chloroform could only be compared from a medico-legal point of view with those occurring from very slight shocks, especially to the laryngeal region, which had been known to cause death. Emotion, even that produced by touching the part about to be operated on, or the first incision, had caused death. Such deaths, therefore, ought not to be attributed to chloroform, even though the patient were under that drug at the time.

March 4th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The late Professor Julius Wolff.

DR. JULIUS WOLFF, professor of orthopædic surgery in the University of Berlin, died on Feb. 18th after a short illness, the cause of death being apoplexy. He was born in 1836 in Märkisch-Friedland, West Prussia, and after completing the medical curriculum at Berlin University he took his degree in 1860 and in the following year became qualified to practise. He commenced professional life as a general practitioner in Berlin, devoting his leisure time to researches in anatomy and physiology. The histology of bone had a special interest for him, and in common with the late Professor von Meyer of Zürich he investigated the connexion between the trabeculæ and the growth of bone. Osteology was, in fact, the favourite study of his life, on which account in Berlin medical circles he was familiarly known as "Knochen-Wolff" (i.e., "Bones"). His intimate knowledge of osteology and the experience of military surgery which he gained in the wars of 1864 and 1866 led to his giving up general practice in order to devote himself to surgery, and he succeeded so well in this new field that although he had never been assistant to a surgical teacher he was nevertheless as early as 1868 appointed *privat-docent*, and in 1884 extraordinary professor of surgery, in Berlin University. Orthopædic surgery and plastic operations of various kinds, particularly those for hare-lip, were his specialty. On the founding of a chair of orthopædic surgery in 1890 Professor Wolff was appointed to it, and the Royal Orthopædic Clinic was formed by uniting his private clinic with the one belonging to the university. In 1892 his great work on "The Transformation of Bones" was published under the auspices, and at the expense, of the Royal Academy of Berlin.[1] Physically, Professor Wolff was a tall, strong-looking man; he was universally liked by his professional brethren and his death is much regretted.

A Boycotted Hospital.

As a general rule the hospitals of Berlin and its environs are in a state of chronic overcrowding, but there is a notable exception in the case of the hospital at Lichterfelde. This institution has beds for 350 patients, but it seldom happens that more than 200 of them are occupied, the explanation of this dearth of patients being that the hospital is boycotted both by the medical men of the district and by the local authorities on account of the peculiar methods of treatment and management which are in operation there. The chief medical officer of this hospital is Professor Schweninger, who became a celebrity with the public as the medical attendant of the late Prince Bismarck. Even in illness the prince was far from being a tractable subject, but Dr. Schweninger's natural energy of character was equal to the occasion, and by the exercise of a kind of suggestion he succeeded in relieving the nervous troubles from which his patient suffered. The Iron Chancellor's gratitude took the form of procuring for him an appointment as professor in Berlin University, despite the unanimous opposition of the medical faculty. The news that an important professorship had been disposed of in such a way caused general astonishment and the incident gave rise to very animated debates in Parliament. Dr. Schweninger had never done anything for the advancement of medical knowledge, and the peculiar views which he held caused him to be regarded by his medical brethren as being in some degree an outsider. He used to say, for instance, that modern medicine was a failure; that students were nowadays trained in the science of medicine whereas what the public required were men trained in the art of medicine—men who knew how to cure their patients. Exact diagnosis, he maintained, was not necessary for the purpose of treatment; a medical man ought to be as much at home in the kitchen as in the laboratory; and he intended to found a new medical school, an Aerzte-Schule where his principles would be taught to the students. The Lichterfelde hospital, of which he was made chief physician, gave him an opportunity of treating hospital patients according to the system which he had hitherto followed in his private practice, but the anticipated results were not realised; on the contrary, this new and lavishly fitted-up hospital has from the first been a source of trouble to the council of the district of Teltow to which it belongs. At an early period there was a general strike on the part of the nurses—perhaps a unique event in the history of hospitals; then Professor Schleich, the chief surgeon, resigned because Professor Schweninger wished to decide in every case whether a surgical operation was necessary or not, thereby placing the surgeon in the position of a mere operator. No other surgeon accepted the vacant post, the result being that fractures of the femur were treated by massage and that plaster bandages were applied to strangulated hernia, whilst cancer was never operated on at all, being, in Professor Schweninger's opinion, a constitutional disease. The most striking fact, however, was the enormous death-rate from diphtheria. In the other Berlin hospitals, where the serum treatment was used, the diphtheria mortality was from 12 to 13 per cent., but in the Lichterfelde hospital it was 64·7 per cent. This state of affairs soon attracted the attention of the medical profession and the authorities of the district. Dr. Rabnow, president of the medical association of Schöneberg, a town in the Teltow district, published a statement to the effect that the medical practitioners of that place declined to send patients to the Lichterfelde hospital; the municipal council of the town also declined to pay the annual sum of 50,000 marks (£2500) which had been its contribution to the hospital, and other places in the district took a similar course, so that financial difficulties arose. At the last meeting of the Teltow district council the Landrath (governor of the district) took an optimistic view, saying that in his opinion the charges made against Professor Schweninger were due to the hostile feeling of the medical profession and that on an inquiry being held by the medical officer of health of the district it was found that the hospital was in a good condition and that the patients had expressed their satisfaction with their general treatment. The leading journals, however, both medical and non-medical, controvert his statements and express disapproval of the system followed at the Lichterfelde hospital.

German Medical Congresses.

The Congress of the German Surgical Society will meet from April 2nd to the 5th in Berlin under the presidency of Professor Kocher. The principal subjects of discussion will be the Dressing of Wounds on the Battlefield, introduced by Professor von Bruns of Tübingen; the Histogenesis of Carcinoma, by Professor Gussenbauer; the Treatment of Carcinoma of the Bowel, by Professor von Mikulicz; Operations for Subphrenic Abscess, by Professor Körte; Colopexy, by Professor von Eiselsberg; and Orthopædic Surgery, by Professor König.—The Congress of Internal Medicine will meet at Wiesbaden from April 15th to the 18th, Professor Naunyn in the chair. The official subjects of discussion are Photo-therapeutics and the Diagnosis and Treatment of Gastric Ulcer.

March 3rd.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Imperial Medical Society of Constantinople.

FEBRUARY 15TH was the anniversary of the foundation of the Imperial Medical Society of Constantinople, of which Djemil Pasha is the newly-elected president. Djemil Pasha is a very skilful surgeon; he is one of the professors of clinical

[1] This book, "Das Gesetz der Transformation der Knochen," was favourably reviewed in THE LANCET of July 15th, 1893, p. 140.

surgery in the Constantinople Medical School and is also brother-in-law of the Sheikhislam, who holds the highest position in the religious system of Islam next after the Sultan. This is the first time that Djemil Pasha has filled the presidential chair, but he was elected one of the vice-presidents of the society a few years ago, and it is hoped that he may succeed in convincing those in authority that it is in such financial straits that doubts are entertained as to the possibility of carrying it on much longer. The society's position was explained to the Sultan by Dr. Spirido Mavrogeny Pasha (an obituary notice of whom appeared in THE LANCET of Feb. 8th, 1902, p. 411) and His Majesty several times asked the opinion of the society on various medical subjects, but the Government grant at present made to it is nevertheless only one-fifth of that which it received from Sultan Mahmoud on its foundation in the time of the Crimean war. An important paper on Epidemics of Dysentery in Tunis was submitted to the society last year by Dr. Remlinger, in the course of which he stated that at the end of the disease there was very often a kind of general anasarca or œdematous swelling of different parts of the body unaccompanied by albumin in the urine. This phenomenon has, however, been already observed in the chronic diarrhœa of children, and Dr. Zavitzianos of Constantinople has mentioned these symptoms in articles which he has published on cholera infantum. Another communication made to the society related to the destruction of rats on shipboard by means of carbonic acid, but the author, a chemist in Constantinople, unfortunately made his experiments, not with rats on shipboard, but with white mice in a cage on land. The Austrian Lloyd Shipping Company, which naturally has an interest in the destruction of rats, has informed the International Sanitary Board that on the first opportunity it will give facilities for making experiments under proper conditions—namely, in a ship which contains rats and also has cargo on board. The International Sanitary Board has published a regulation requiring all vessels that enter the port of Constantinople to produce a certificate from the authorities of the port of departure declaring that there are no rats on board, dead or alive. In the absence of such a certificate vessels must go to Cavak at the entrance of the Bosphorus, near the Black Sea, where they must unload and have the rats exterminated by means of burning coal and sulphur. Vessels, in fact, go there now and then and, according to the official reports, the rats on board are all destroyed.

Landing of Live Animals in Egypt Prohibited.

It has been announced from Alexandria that cattle or other animals sent from European Turkey will not be allowed to enter Egypt but will have to be slaughtered in the lazaretto. It is well known that there is no prevalence of epizoötic disease in European Turkey, and this step can only be explained as a protectionist device to favour Egyptian cattle-breeding.

Medical Education in Teheran.

It is reported from Teheran that the Shah of Persia has invited the medical members of the International Sanitary Board of Teheran to consider the question of improving the state of medical education in that capital, where it seems that there is a medical school of some kind either actual or nominal.

Feb. 24th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Men in the Navy have no Right to Refuse an Operation, if it is not Serious.

THE Navy Department, by Acting-Secretary Darling, holds that an enlisted man in the Navy or Marine Corps has no right to refuse to submit to a surgical operation, if it is not serious, but declines to lay down any rules for cases involving the loss of a limb or in which a man's life would be endangered. He recommends the exercise of persuasion and diplomacy on the patient in serious cases, but in minor cases he decides that the man who refuses to be operated upon may be court-martialled and punished. Incidentally, the department has overruled Rear-Admiral Louis Kempff, junior squadron commander on the Asiatic Station, who refused to let surgeons operate on an unwilling patient. The decision of the department extends only to the enlisted men; no ruling has been made in the case of an officer, although a precedent was established by Rear-Admiral Robley D. Evans, who drew a revolver on the surgeons who came to cut off his legs after he had been severely wounded in the battle of Fort Fisher. Admiral Evans retained his legs and remained in the service, though quite lame. The case just decided was that of a marine private serving on the monitor *Monadnock* in Chinese waters. The surgeon of that ship wanted to remove a foreign growth which unfitted the man for duty, but the marine refused. He was reported to Admiral Kempff, who sustained his stand. Then an appeal was taken by the Navy Department. The Bureau of Medicine and Surgery expressed the opinion that most cases of this character could be adjusted by using tact and persuasion in trying to induce the patient to submit to an operation, but held that where a minor operation was required the patient should be obliged to submit or be punished, and the Acting Secretary upholds these views.

The Protection of Presidents.

A Bill for the protection of the President of the United States, the Vice-President, and others, provides that any person who shall within the limits of the United States or any place subject to its jurisdiction wilfully kill or cause the death of the President or Vice-President, or any officer in line of succession, or who shall wilfully cause the death of any sovereign or chief magistrate of any foreign country, shall be punished with death. An attempt to commit either of the offences mentioned is also punishable by death. The Bill also provides a punishment of 20 years' imprisonment for the person or persons found guilty of instigating, advising, or counselling the killing of any of the persons named; and any person who shall wilfully and knowingly aid in the escape of any person guilty of the offences mentioned shall be deemed an accomplice and punished the same as if a principal. Imprisonment of five years is provided for persons convicted of uttering words, spoken or published, which threaten to kill or to advise or to instigate anyone to kill the persons named. The Secretary of War is authorised and directed to select a detail from the regular army to guard and protect the person of the President, "without unnecessary display," and to make special rules and regulations as to dress, arms, and equipment of such guard, and to publish only such of the rules and regulations as he may deem proper.

New Management for Bellevue and Allied Hospitals.

Bellevue and the allied hospitals, Harlem, Gouverneur, and Fordham, and the Emergency Hospital, on Feb. 1st passed from the control of the charities department to that of the recently appointed board of trustees, under the provisions of the revised charter. This same system of trustee management is now in force in private hospitals in this and other cities and also in the city hospitals of Boston and Cincinnati. The private hospitals of New York have always been thus managed, but it is only in Boston and Cincinnati that the city hospitals have had the benefit of the plan. In both these cities the city hospital was incorporated by Act of Legislature between 35 and 40 years ago, to be maintained as an institution by itself, independently of all other institutions, charitable or otherwise. In both cases the hospitals are models of their kind and will bear comparison with the best private hospitals in any of our cities. In Boston the trustees are appointed by the Mayor, subject to the approval of the City Council. In Cincinnati one member is appointed by the Governor, two by the Superior Court of Hamilton County, and two by the Court of Common Pleas of Hamilton County. In both cases these appointments are made without regard to political considerations. In other large cities, such as Philadelphia, Chicago, St. Louis, and San Francisco, on the other hand, the public or city hospitals are a part of the department of public charities, and their control and management change, as in New York, with each change of the city administration. In each case the hospitals being a part of a city department are considered to belong to the party in control and form an important share in the distribution of party patronage.

Congressional Legislation on Typhoid Fever Notification.

The House Committee has reported favourably on the Typhoid Fever Bill which reads as follows:—

Every physician attending or called in to visit or to examine any case of typhoid fever in the district of Columbia, shall at once send to the health officer of the district a certificate, in ink, signed by him, stating the name of the disease and the name, age, sex, and colour of the person suffering therefrom, and setting forth by street and number, or otherwise sufficiently designating the house, room, or other place in which the person can be found, together with such other reasonable

information relating thereto as may be required by the health officer; and upon the recovery or death of such patient the physician in attendance shall within 24 hours after he becomes aware of such recovery or death forward to the health officer a similar certificate certifying thereto. Any person violating any of the provisions of this Act shall upon conviction thereof be deemed guilty of misdemeanour and shall be punished by a fine not exceeding $100.

Surgeon-General of the Navy.

Captain Pressley M. Rixey, medical director of the United States navy, formerly attendant physician of the late President McKinley, has been nominated as Surgeon-General of the navy by President Roosevelt, in ratification of the promise of his lamented predecessor. This promotion gives Dr. Rixey the rank of rear-admiral; he succeeds Rear-Admiral William K. Van Reypen, who is placed on the retired list with the rank and retired pay of a senior rear-admiral. Dr. Van Reypen has been in the service over 40 years.

The Health of Havana.

Major Gorgas, chief sanitary officer of Havana, reports on the health of Havana as follows. The entire health of the city for the year just ended over the preceding years is wonderful. There has been a very large decrease in the number of deaths in almost all of the different diseases. This is especially true of yellow fever; there have been few cases in comparison with the record last year and the last three months of the present year were absolutely free from the disease. The cause of the decrease in yellow fever is undoubtedly due to the work on the theory that the mosquito is the transmitter of the disease. During the month of December there has been no yellow fever or small-pox.

The Prosecution of a Health Officer for the Examination of Prostitutes.

The compulsory examination of prostitutes by officials has always been extremely unpopular in the United States. It appears, however, that the health officer of Cincinnati, Ohio, has been enforcing examinations as a public health measure and the result has been a suit brought against him by a taxpayer. The petition of the plaintiff stated that the defendants "have adopted and are enforcing a regulation requiring all known prostitutes in said city to submit to a personal examination once every week by the district physicians to determine whether they are affected with any venereal disease, and if found free therefrom each prostitute receives a certificate containing her personal description and the recital of the fact that she is free from disease, which certificate can only be obtained from the health officer and must be conspicuously displayed in the room of such prostitute; that these certificates are made out in triplicate, one for exhibition by the person examined, one for the health department, and one for the chief of police; that if any prostitute is found to be affected with venereal or other infectious disease she is not permitted to remain an inmate of such house of prostitution or assignation, but is sent to the city hospital or branch hospital of the city; and, finally, that said district physicians charge each prostitute the sum of 50 cents for each examination and certificate." The plaintiff prayed for a restraining order on the ground that such examinations and charges for the same were an abuse of the corporate power of the city of Cincinnati. In reply, the defence stated that it was known to the health authorities that in certain houses and in specified localities contagious and infectious diseases prevailed more than in other parts of the city, and that the public health of the city required periodical visits and careful inspections of such places, as well as the examination of those suspected of disease; these measures tended to prevent and to restrict disease. The suit was dismissed.

Feb. 13th.

Obituary.

SAMUEL ALEXANDER KENNY STRAHAN, M.D. R.U.I.

THE receipt of the news that Dr. S. A. K. Strahan had died in London on Feb. 21st caused widespread regret in Belfast. After studying at Queen's College, Belfast, where he had a most brilliant career, Dr. Strahan graduated M.D. at the Royal University of Ireland in 1879. Coming afterwards to England he devoted his attention to the special study of mental diseases, and for many years he was the senior medical officer of Berrywood Asylum. While there he contributed largely to the *Journal of Mental Science*, the *Medical Magazine*, and the *Humanitarian*, and wrote treatises on "Heredity" and "Suicide and Insanity" and a book on "Marriage and Disease." Dr. Strahan subsequently became a barrister. About three years ago, his health failing, he resigned his post at Berrywood and took a voyage round the world to try to improve the condition of his heart. Last spring he went to Africa and visited some of the military hospitals where, unfortunately, he developed malarial fever and was obliged to come home and to reside in Brighton. There his health improved and he was just about to arrange for a voyage to Australia when he became suddenly ill and died in London on Feb. 21st. Dr. Strahan was a man of great ability and gifts and was deservedly popular, and his unexpected death is very much regretted. He came of a clever family. One of his brothers, the late Professor of Law at Queen's College, Belfast, is Mr. James Strahan, LL.D., who practises as a barrister in London; another brother is a leading solicitor in Belfast; and another brother, who was in medical practice in Belfast, was the late Dr. John Strahan who wrote several admirable medical works. Dr. S. A. K. Strahan was buried in Belfast on Feb. 26th.

JOHN HENRY ECCLES, M.R.C.S. ENG., L.S.A.

WE regret to have to record the death of Mr. J. H. Eccles of Plymouth at the ripe age of 87 years. After passing through his curriculum at St. Bartholomew's Hospital he qualified in the year 1839 and subsequently settled in Plymouth. He there continued in active pursuit of his profession for over 40 years. Always a man of thorough earnestness of purpose, it was not long before he received appointments of a public character, and at the time of his decease he was consulting surgeon to the Plymouth Royal Eye Infirmary. He had also held numerous and important offices in connexion with the town and port, particularly that of medical inspector of emigrants. His cheery nature and great kindliness of heart made him a friend of many and won the esteem of all. He was an intense lover of nature and was never tired of showing to relatives and friends the natural beauties of his county and especially the magnificent view of the Sound from the historical Hoe. He was twice married and leaves a widow and many descendants to feel their loss. Three of his sons by his first wife followed in his footsteps as medical men, one of whom, Dr. Symons Eccles, predeceased him. Four of his grandsons are also members of the same profession.

JOHN JAMES TWEED, F.R.C.S. ENG., L.S.A.

MR. TWEED, whose death occurred at his residence in Upper Brook-street, Grosvenor-square, London, W., on Feb. 22nd, was the son of a well-known surgeon who practised at Bishop Stortford, in Essex, where Mr. Tweed was born in 1819. Part of his school education was received at University College, London, and he afterwards prosecuted his medical and surgical studies at University College Hospital, of which latter institution he was a life governor. He became a Member of the Royal College of Surgeons of England in 1842, and was elected a Fellow in 1864, thus he was actively engaged in his profession for the unusually long period of 60 years. Mr. Tweed was the oldest inhabitant of Upper Brook-street and was one of the most hard-working and deservedly respected of the members of his profession. He was a Fellow of the Obstetrical Society of London and had had a very large obstetric practice, to which he devoted the best years of his life. He was remarkably abstemious and temperate in all things, never brilliant, but patient and enduring. His old-fashioned courtliness of manner and his attention to all those by whom he was consulted won for him the affection of a very large number of patients and friends.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Eugenio Fazio, *privat-docent* of Hygiene in the University of Naples.—Dr. Chedevergne, Professor of Clinical Medicine at Poitiers.—Dr. Arthur Geissler, Director of the Statistical Department of the Kingdom of Saxony.—Professor Coshevnikoff, Director of the Moscow Clinic for Mental and Nervous Diseases.—Dr. Gustav Siegmund, one of the best known practitioners of Berlin, at the age of 81 years. In his earlier years he contributed numerous papers to the medical journals on medical chemistry and experimental pathology.—Dr. Alfonso Masi, lecturer on Operative Medicine in the University of Buenos Ayres.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the First Examination of the Board in the subjects indicated at the January quarterly meeting of the examiners:—

Chemistry.—Leonard Ernest Acomb, Middlesex Hospital; Gilbert Kennedy Awbery, King's College Hospital; Albert John Knowles Brayton, Owens College, Manchester, and University College, Liverpool; William Augustine Joseph Mingaye Briggs, Owens College, Manchester, and St. Thomas's Hospital; William Winsland Douglas Chilcott, Charing-cross Hospital; Robert Malcolm Coalbank, St. Bartholomew's Hospital; George William Collinson, Yorkshire College, Leeds, and Halifax Technical School; George Herbert Curtis, Birkbeck Institute; Gurth Eager, King's College Hospital; Frans Gustaf Etholm, Birkbeck Institute; Lionel Gipps Hopkins Furber, Cambridge University, St. Bartholomew's Hospital, and Hartley College; William James Gifford Gayton, London Hospital; Howard Græme Gibson, Felsted School; Vivian Bartley Green-Armytage, University College, Bristol; Gerald Holroyde, Yorkshire College, Leeds; Thomas Jones Jenkins, University College, Cardiff; Valentine Goode Johnson, St. Mary's Hospital; Maurice Aloysius Kenny, Yorkshire College, Leeds; William Kenneth Kershaw, Owens College, Manchester; William Wilfred King, University College, Bristol; Albert Lawrence Loughborough, St. Thomas's Hospital; Joseph Leopold Meynell, London Hospital; Alfred James Mundy, University College, Bristol; Edward Morgan, Frederick Morres, Charles Melton Ockwell, and Hubert Arnold Pallant, Guy's Hospital; David Phillips, St. Mary's Hospital; Frederic Eustace Leigh Phillips, London Hospital; Sri Krishna Raina, Allahabad University, Charing-cross and King's College Hospitals, and Birkbeck Institute; Harold Trenchard Rossiter, University College, Bristol and St. Thomas's Hospital; Harold Kenneth Salisbury, University College, Bristol; George Alan Simmons, St. Thomas's Hospital; Frederick Smith, Firth College, Sheffield; Leslie Ernest Maule Smith, Charing-cross Hospital; Frank Harold Stephens, St. Mary's Hospital; Edmund James Fairfield Thomas, University College Bristol; Geoffrey Wacher, Guy's Hospital; John Grandisson Watkins, St. Bartholomew's Hospital; John Wells Whiteman, University College, Bristol; and Albert Blagbrough Wolfenden, Yorkshire College, Leeds, and Halifax Municipal Technical School.

Practical Pharmacy.—Gilbert Kennedy Awbery, King's College Hospital; Frederick Barnes, Guy's Hospital; Hugh Frank Bodvel-Roberts, Cambridge University and St. Bartholomew's Hospital; Richard Burges, London Hospital; Arthur Hubert Davis, St. George's Hospital; Cecil James Stewart Dismore, Guy's Hospital; Kenneth Alan Crawford Doig, Westminster Hospital; Charles Roland Babington Eyre, St. Thomas's Hospital; George Ernest Oswald Fenwick, Otago University and University College Hospital; Charles Aubrey Godson, St. George's Hospital; Ernest Harrison Griffin, Cambridge University and Guy's Hospital; Robert George Ernest Grote, Charing-cross Hospital; Charles John Hope Gunning, St. George's Hospital; George Read Hannon, King's College Hospital; Henry Francis Hatfield, Guy's and St. Bartholomew's Hospital; George Wykeham Heron, Westminster Hospital; Archibald Edward Hills and Edward Torriano Holland, St. Thomas's Hospital; Basil Hood, Charing-cross Hospital; Philip Reginald Humphry and Mark Oliver Hunter, St. George's Hospital; Edgar Joseph and John Alfred Laughton, Charing-cross Hospital; Richard Ernest Howell Leach and George Mackenzie Lester Lester, Oxford University and St. Thomas's Hospital; George Murray Levick, St. Bartholomew's and University College Hospitals; Hamish Nicol, Westminster Hospital; Bryan Pick, St. George's Hospital; Carl Henry Reinhold and Jules Frederick Rey, Guy's Hospital; Ernest Sydney Routly, St. Mary's Hospital; Malcolm Winfrid Shutte, St. George's Hospital; Charles Speers, St. Mary's Hospital; Frederick Morton Vincent Smith and Francis John Turner, Guy's Hospital; George Sydney Welham, Charing-cross Hospital; Frank Edred Whitehead, Ambrose Cyril Wilson, and Frank Herbert Wood, St. Bartholomew's Hospital; and George Ernest Wood, St. Mary's Hospital.

Elementary Biology.—Robert Nicholas William Biddulph, University College, Bristol; Albert John Knowles Brayton, Owens College, Manchester, and University College, Liverpool; Archibald Cordon, Mason College, Birmingham; Henry Drysdale Dakin, Yorkshire College, Leeds; Llewellyn Etter Davies, University College, Liverpool; Herbert Alfred De Pinna, Middlesex Hospital; Francis Carminow Doble and Gurth Eager, King's College Hospital; Howard Græme Gibson, Felsted School; William Robert Greening, Guy's Hospital; Cyril Verity Griffiths, King's College Hospital; John Keith Anderson Helm and Herbert John Hills, Guy's Hospital; Hugh George Hobson, Middlesex Hospital; Gerald Holroyde, Yorkshire College, Leeds; Charles Matheson Kennedy and John Iles Francis Knight, London Hospital; Thomas Gordon Lewis, King's College Hospital; Albert Lawrence Loughborough, St. Thomas's Hospital; Percy John Lush, London Hospital; Oscar Le Fevre Milburn, Birkbeck Institute; Malcolmson Knox Nelson, University College, Belfast; John Harry Mayston, Edward Morgan, Gerald Hamilton Morris, George Ramsey Phillips, Edward Ebenezer Rendle, and Arthur Tunna Rivers, Guy's Hospital; Cecil Frank Rumsey, Charing-cross Hospital; Gilbert Bodley Scott, St. Bartholomew's Hospital; Gerald Noel Boyd Sebastian, St. George's Hospital; Sidney Slade, Middlesex Hospital; Frederick Smith, Firth College, Sheffield; Herbert McLean Staley, Owens College, Manchester; Richard Henry Easington Stevens, University College Hospital; Arthur Westray Swinburne, Yorkshire College, Leeds; Arthur Christopher Watkin, University College Hospital; Reginald Willan, Guy's Hospital; and John Dill Williams, University College, Belfast.

The following gentlemen passed the Second Examination of the Board at the quarterly meeting of the examiners:—

Anatomy and Physiology.—Wilfrid Godwin Attenborough, King's College Hospital; José Maria Barrionuevo and Arthur Morris Benett, Guy's Hospital; Charles Murchison Bernays, St. Thomas's Hospital; John Braybrooke Binns, St. Bartholomew's Hospital; William Bowater, Mason College, Birmingham; Herbert Alfred Bodkin and Leonard Howard Bowkett, London Hospital; Robert James Brogden, University College, Cardiff; George Hammond Cheyney, Guy's Hospital; George Percival Charles Claridge and Patrick Duncan MacIver Campbell, St. Mary's Hospital; Thomas Alexander Clarke, King's College Hospital; Owen Cunningham Preston Cooke, London Hospital; Hugh Palliser Costobadie, Guy's Hospital; James Alexander Cowie, B.A., B.Sc., New Zealand, Otago, and Glasgow Universities; John Rees Davies, University College, Cardiff; Alban Dixon, St. Mary's Hospital; Edmund Michael Dolan, Yorkshire College, Leeds; Percy Albert Stanley Dyson, Guy's Hospital; Stephen Field, St. Mary's Hospital; Eustace Stanley Hayes Gill, University College, Liverpool; Henry Gray, St. Bartholomew's Hospital; Arthur Donald Griffith, King's College Hospital; Edwin Claude Hayes, St. Bartholomew's Hospital; Samuel Clifford Hayman, University College, Bristol; Frederick Charles Hepburn, Cambridge University; Robert Rutson James, St. George's Hospital; Harold Ernest Kitchen, B.A., Cambridge and Owens College, Manchester; Arnold Leeming, Guy's Hospital; Archibald Smith Littlejohn, B.A., Cambridge and Guy's Hospital; Sidney Hirst Lockwood, St. Mary's Hospital; Conrad Loddiges, St. Bartholomew's Hospital; Frederick James Macphail, University College, Liverpool; Edgar William Matthews, King's College Hospital; Frederick William Morgan, University College, Bristol; Ernest Blommart Miles, Hugh Francis Fountain Mortimer, William George O'Malley, London Hospital; Arthur O'Neill, St. Bartholomew's Hospital; Hugh Falkenberg Powell, University College, Hospital; William Hugh Prendergast Parker, University College, Cardiff; Harold Edgar Priestly, St. George's Hospital; Leslie Rawes and Harold William Read, St. Thomas's Hospital; Frederick John Rees, Calcutta Medical College; Walter Reeve, Guy's Hospital; Frank Melville Pitcairn Rice, St. Bartholomew's Hospital; Philip Meredith Roberts, University College Hospital; Edwin Walter Routley, Guy's Hospital; Albert Salmon and Ernest Littleton Sandiland, London Hospital; Gerald Maberley Taylor and William Reginald Margetts Turtle, London Hospital; Theophilus Ralph Waltenburg, M.A., Oxford, and Owens College, Manchester; Frederick Weber, St. Bartholomew's Hospital; Leonard White, Westminster Hospital; Trevor Hamilton Witkins and William John Wilkinson, St. Thomas's Hospital; Ernest Douglas Wolff, King's College Hospital; and Walter John Weston, St. George's Hospital.

Anatomy only.—Urban Morris Asplen, King's College Hospital; and Wilfrid Robert Pagen, London Hospital.

Physiology only.—John William Wynne Hogan, Madras Medical College; and Charles Frederick Stileman, St. George's Hospital.

UNIVERSITY OF CAMBRIDGE.—The following degrees were conferred of Feb. 27th:—

Doctor of Medicine.—G. H. Goldsmith, Gonville and Caius.
Bachelor of Medicine and Bachelor of Surgery.—J. S. Steele Perkins, St. John's.
Bachelor of Medicine.—J. L. Timmins, Emmanuel.
Bachelor of Surgery.—J. E. W. Cole, Corpus Christi.

CAPTAIN E. T. INKSON, V.C., R.A.M.C., was entertained at a complimentary dinner given in his honour by the Union Society of University College and Hospital on Feb. 21st, in recognition of his distinguished services in the South African war. The dinner took place at the Café Royal, Regent-street, London, W., and Dr. Vivian Poore occupied the chair. There were over 150 guests present and the proceedings were marked with the utmost enthusiasm. Among those present were Mr. Christopher Heath, Dr. J. Rose Bradford, Dr. Herbert R. Spencer, Dr. Dudley W. Buxton, Dr. Vaughan Harley, Mr. Victor Horsley, Lieutenant-Colonel W. Babtie, V.C., C.M.G., R.A.M.C., Sir J. R. A. Clark, Bart., R.A.M.C., Mr. A. E. J. Barker, and Mr. Raymond Johnson. After the usual loyal toasts had been duly honoured Mr. Christopher Heath proposed the toast of "The Services," which was responded to by Lieutenant-Colonel Babtie. The chairman then proposed the health of the guest of the evening, Captain Inkson, V.C., and read the following extract from the official statement regarding the act for which that officer received his decoration: "On the 24th of February, 1900, Lieutenant Inkson, R.A.M.C., carried Sec. Lieutenant Devenish (who was severely wounded and unable to walk) for three or four hundred yards under a very heavy fire to a place of safety. The ground over which Lieutenant Inkson had to move was much exposed, there being no cover available." The chairman also reminded his audience that General Buller in his official despatches had referred to the habitual gallantry displayed by Captain Inkson. In responding to the toast Captain Inkson thanked the Union Society of University College and Hospital for the honour they had paid to him and with some difficulty was persuaded to give a short account of the active service which he had seen in South Africa.

THE offices of the London and Counties Medical Protection Society, Limited, have been removed from 12, New-court, Lincoln's Inn, to more commodious premises at 31, Craven-street, Charing-cross, W.C.

PRESENTATION TO A MEDICAL PRACTITIONER.—Mr. C. J. Denny, M.R.C.S. Eng., L.R.C.P. Irel., on retiring from practice in Blackwater, has been presented (by his own request informally) with a cheque for £121 10*s.* subscribed by many patients and friends.

"THE CONSCIENTIOUS OBJECTOR."—At St. Columb (Cornwall) petty sessions on Feb. 25th a man applied for a certificate of exemption from vaccination for his child on the grounds that he had a conscientious objection to the operation. Five of the magistrates on the bench refused to sign the certificate; two, however, did so, holding that under the law they could not refuse, but they maintained that vaccination should be made compulsory.

HEALTH OF BATH RURAL DISTRICT.—Mr. C. Harper, the medical officer of health, in his annual report of the Bath Rural District, states that the population of the district is 27,764 and the area of the district 27,286 acres. During 1901 there were 327 deaths registered, corresponding to a death-rate of 11·7 per 1000, as against 11·8 in 1900; 673 births were registered, equal to a birth-rate of 24·2 per 1000, compared with 24·3 in the previous year.

VACCINATION RETURNS.—The vaccination returns issued by the Barnstaple Board of Guardians for the first six months of 1901 state that in the Barnstaple district 207 births were registered, 163 successful vaccinations were performed, and 15 certificates of conscientious objection were granted; in the Ilfracombe district 188 births were registered, 141 successful vaccinations were performed, and 15 certificates of conscientious objection were granted; and in the Coombe Martin district 76 births were registered, 64 successful vaccinations were performed, and four certificates of conscientious objection were granted.

THE LATE DR. T. R. LOMBE.—Dr. Thomas Robert Lombe died at his residence, Waldon Hill, Bemerton, Torquay, on Feb. 23rd, in his 82nd year. Dr. Lombe received his medical education at St. Bartholomew's Hospital, taking the qualifications of M.R.C.S. Eng. and L.S.A. in 1843 and 1844 respectively. He graduated as M.D. of Aberdeen University in 1856. Dr. Lombe had been for several years in practice at Torquay and was physician to the Erith House Institution for Invalid Ladies and consulting physician to the Western Hospital for Consumption. He took considerable interest in botany and his gardens at Bemerton contained many rare plants. The funeral, which took place on Feb. 27th, was largely attended.

ROYAL LONDON OPHTHALMIC HOSPITAL.—The annual general meeting of the governors of this hospital was held on Feb. 26th, in the board-room of the hospital. Mr. H. P. Sturgis (chairman of the committee of management) presided and moved the adoption of the annual report. In doing so he stated that during the last year the institution had nearly 1900 in-patients and 31,200 new out-patients, which involved over 100,000 attendances. He thought, therefore, that there could be very little doubt that the hospital was required. They were fortunate enough to have a grant made to them in January by King Edward's Hospital Fund to enable them to open 18 more beds. Those beds were opened in January and were at once filled. The grant would probably enable them to take in some 400 additional in-patients during the year. There were 88 beds open at present, but still patients had to wait for several weeks before they could be admitted, except in cases of urgency, and he was confident that if they could open the 50 remaining beds they would be able to fill them to-morrow. Referring to the efficiency of the hospital he pointed out that the institution had had strong testimony on this point from King Edward's Hospital Fund. In the first place it had received a grant of £1250, which was the largest one received by any special hospital and the largest received by any hospital with the exception of two. As to the financial position of the institution, he pointed out that they required £5169 to clear the hospital from its debt on Dec. 31st last and also £8000 in further annual subscriptions or donations for the expenses of the current year. He did not see how it was possible to reduce the expenses, but he was certainly of opinion that such institutions ought to be relieved of the burden of rates. The report was unanimously adopted.

VACCINATION EXPENDITURE.—At a meeting of the St. Thomas (Exeter) Board of Guardians, held on Feb. 28th, it was stated that the vaccination expenses for six months amounted to £600.

DEATH FROM ELECTRIC SHOCK.—On Feb. 28th, at the Alhambra Theatre, Attercliffe, Sheffield, an electrician's labourer was amusing himself by swinging on an electric-light bracket when it gave way and he received a fatal shock, a current of 200 volts passing through his body. At the inquest, which was held on March 3rd, the jury returned a verdict of "Accidental death."

HUNTERIAN SOCIETY.—The following gentlemen have been elected as officers of the society for the ensuing year:—President: Dr. A. L. Galabin. Vice-Presidents: Mr. H. J. Sequeira, Mr. F. R. Humphreys, Dr. W. Rawes, and Dr. W. A. Dingle. Treasurer: Dr. R. Hingston Fox. Trustees: Dr. H. I. Fotherby and Mr. F. M. Corner. Honorary Librarian: Dr. T. H. Arnold Chaplin. Orator: Mr. T. H. Openshaw. Secretaries: Mr. J. H. Targett and Dr. T. Glover Lyon. Editorial Secretary: Dr. W. Rawes. Council: Sir Hugh Beevor, Bart., M.D., Mr. J. S. E. Cotman, Dr. A. T. Davies, Dr. Fortesque Fox, Mr. A. W. Galloway, Dr. J. Dundas Grant, Dr. E. W. Goodall, Dr. H. V. Hickman, Mr. J. Kearney, Dr. J. W. Oliver, Dr. David Ross, and Dr. J. H. Sequeira. Auditors: Mr. F. Gordon Brown, Mr. Hope Grant, Dr. G. Newton Pitt, and Dr. F. J. Smith.

THE ROYAL INSTITUTION.—Gold Mining in Klondyke formed the subject of the Friday evening discourse delivered in the Royal Institution on Feb. 28th by Professor Henry A. Miers, who visited the district last August. An area of 20 miles square was occupied by the auriferous region, the streams in which radiated from a central mountain called the Dome. Gold was obtained from gravel either in the bed of the valley or in the hill-side. In the latter situation it was reached by means of tunnels driven in horizontally. In the valleys great difficulties arose from the fact that the gravel was covered by 10 or 15 feet of bog or peat, which was permanently frozen hard, and had to be thawed either by dropping hot stones into a hole, or by wood fires, or by steam heat. There was no crushing of gold-ore in Klondyke. Landscapes on view in the library of the institution contained references to extensive deposits of vanadium ores.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN.—A general court of the governors of this hospital was held on March 3rd at the Mansion House, when the Lord Mayor presided. In moving the re-election of officers the Lord Mayor remarked that considerable extension of the site in the Waterloo-bridge-road had been rendered necessary by the increasing work of the hospital and additional land had been acquired in a great measure through the kindness and consideration of the Duchy of Cornwall and the influence and personal interest of the King. Last year the in-patients numbered 488, the out-patients 8044, and the operations 416. There were only 68 deaths during the year. The average cost of each in-patient was £7 7*s.* 4*d.*, that of each bed occupied £78, and that of each out-patient 2*s.* 2*d.* £10,000 were required before the first half of the building operations could be carried out. The motion having been adopted Mr. J. T. Richardson, the treasurer, said that a sum of £25,000 were required to make the building and extension scheme complete, and towards that amount about £9000 had been subscribed.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Royal Commission on Arsenical Poisoning.

In the Civil Service Estimates for the year ending March 31st, 1903, financial provision is made for another year's work on the part of the Royal Commission on Arsenical Poisoning. The provision is as follows—viz., salary of the secretary, £300; clerical assistance, £104; messenger, £27; typewriting, £50; travelling expenses of commissioners, staff, witnesses, &c., £300; shorthand writing, £200; postage, telegrams, &c., £100; and analysis of food samples and experiments, £800.

Royal Commission on Tuberculosis.

The financial provision for this commission for the year ending March 31st, 1903, is as follows—viz., secretary, £400; clerical assistance, £104; messenger, £36; travelling expenses, £500; shorthand writing, £150; incidental expenses, £150; and scientific investigations, £12,000.

Laundries and Factory Legislation.

A Bill introduced by the Earl of Lytton, bringing laundries within the scope of factory legislation, has been read a second time in the House of Lords. There is little chance, however, of its passing into law, for the Government has intimated that it is not prepared to give it facilities in the House of Commons where it is sure to meet with strenuous opposition from Members interested in religious institutions carrying on laundry business. It was the opposition of these Members which caused Mr. Ritchie to abandon the laundry clause in the Factory and Workshop Bill of last session.

Midwives Bill.

Preparations are now being made for the consideration of the Midwives Bill, by the Grand Committee on Law. At the beginning of each session of Parliament this committee is set up with a certain strength of Members, but when a Bill is referred to it the Committee of Selection nominates additional Members to take part in the discussion of that particular measure. In the case of the Midwives Bill the following 15 additional Members have been so nominated—viz., Mr. Ambrose, Mr. Griffith-Boscawen, Mr. John Burns, Mr. Caine, Mr. Emmott, Sir Michael Foster, Sir Walter Foster, Mr. Heywood Johnstone, Lord Cecil Manners, Mr. T. P. O'Connor, Colonel Sadler, Mr. Schwann, Sir Barrington Simeon, Sir John Tuke, and Mr. Eugene Wason. In anticipation of the proceedings of the Grand Committee Sir John Tuke has given notice of a number of amendments. One of these proposes to make it an offence for an uncertified woman habitually and for gain to attend cases of childbirth and another to subject to the approval of the General Medical Council the rules framed by the Central Midwives Board instead of having them, as the Bill proposes, "subject to the approval of the Privy Council after consultation with the General Medical Council." With regard to the licence question, Sir John Tuke proposes to insert these words—viz.: "No woman shall hold herself out as a practising midwife in any county or county borough without having previously obtained from the local supervising authority a licence enabling her to practise therein, which licence shall be granted on proof by the woman that her name is on the midwives roll. The licence shall remain in force till the thirty-first day of December following, and shall be revocable at any time by the local supervising authority in case the holder be proved to the satisfaction of the Central Midwive Board to have infringed any of the regulations framed under this Act. The licence shall be issued on payment of a fee of one shilling, it shall only be available in the county for which it is issued, and it shall be renewed annually on the first day of January." The Grand Committee will meet on Tuesday, March 11th, to take up the consideration of the Bill, with Sir James Fergusson in the chair.

HOUSE OF COMMONS.

THURSDAY, FEB. 27TH.

Enforcement of the Vaccination Acts.

Mr. JACOBY asked the President of the Local Government Board whether he was aware that the goods of Gershom Squires and Jabez Hatfield of Wirksworth had been seized for the third time for recovery of the same amount of costs incurred under the Vaccination Acts, these men's goods having been seized and sold in July last, again seized to the value of £400 in December last, but not sold owing to failure on the part of the auctioneer; whether he could explain under what authority the third seizure was made; and if any action would be taken.—Mr. RITCHIE replied: I am informed by the chief constable of Derbyshire that the defendants named were ordered in December, 1900, and January, 1901, respectively to pay the costs of orders under the Vaccination Acts and refused to pay. The warrants were only partially enforced at the first distress owing to the action of persons in sympathy with the defendants, and on the second occasion in December the auctioneer failed to attend. The police have now taken further steps to recover the amount due. I have neither the authority nor the desire to interfere with the enforcement of the law.

Richmond Hospital, Dublin.

Mr. PATRICK JOSEPH O'BRIEN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that a claim for £30 had been made on the guardians of Nenagh Union by the governors of Richmond Hospital, Dublin, for the maintenance and treatment of pauper patients sent from the Nenagh workhouse to Richmond Hospital in the year 1900, although paupers from this union had been sent to Richmond Hospital for treatment of special cases for upwards of 30 years prior to 1895 without claim for payment by the hospital authorities; whether he was aware that at the said date a bill was furnished to the guardians for maintenance of pauper patients for two years, but which they repudiated on the ground that the hospital, being maintained by Imperial grant, was bound to receive patients free of charge; whether he was aware that since that time the hospital continued to receive the Board's special cases without question till about 12 months ago, when the claim in question was made, for which the governors were now pressing for payment; and, seeing that this hospital was bound by its charter to receive pauper patients free, would he advise them to do so.—Mr. WYNDHAM replied: The authorities of this hospital are not aware that patients were maintained prior to 1895 without payment. The guardians declined to make any payment in November of last year. There is no obligation attaching to the conditions upon which the Parliamentary grant is paid to the hospital that pauper patients shall be maintained gratuitously. I may point out that the expenditure incurred by the Richmond and other hospitals in respect of public grants is not covered by such grants.

Sophistication of Butter.

Mr. O'SHAUGHNESSY asked the President of the Board of Agriculture whether he was aware that considerable quantities of a material known as milk-blended butter were now made by working milk into butter by a mechanical process whereby the amount of water in the original butter was increased from a relatively small proportion up to 20 or 25 per cent.; and that quantities of foreign butter thus treated were sold monthly; and what steps he would take to prevent this practice.—Mr. HANBURY replied that he was aware of this practice. Its legality was now before the law courts and he must await their decision before he could properly deal with the subject by an amendment of the law or otherwise. As soon as he had had an opportunity of considering the evidence submitted to the Departmental Committee on Butter he would fix a standard, and he hoped that that in itself would go far to meet the difficulty which had arisen.

Vaccination in France and Germany.

Mr. COGHILL asked the President of the Local Government Board whether his attention had been called to legislation recently passed in France and Germany with the object of making vaccination and re-vaccination compulsory on all the population in these two countries; and whether he had any information as to the success of such legislation in diminishing the number of cases of small-pox.—Mr. GRANT LAWSON, answering for Mr. LONG, said: I understand that under a law made this month vaccination and revaccination will be rendered compulsory in France. In Germany vaccination and revaccination have been compulsory on the population generally since 1874. Information obtained by the Royal Commission on Vaccination and referred to in their report, shows that the system has been highly beneficial in diminishing small-pox.

FRIDAY, FEB. 28TH.

The Fees of Medical Witnesses.

Mr. BOWLES asked the President of the Local Government Board whether the instructions given to the auditors with respect to payment of fees by a coroner to medical witnesses under Section 22 of the Coroners Act, 1827, necessitated the disallowance of all fees to medical practitioners who acted gratuitously as medical officers at a hospital infirmary or other medical institution; and whether, if a medical officer attached himself to act gratuitously at any such institution, he was entitled to be paid the fees specified in the said Section 22 of the said statute.—Mr. GRANT LAWSON, replying for Mr. LONG, said: The Local Government Board has not given any instructions to district auditors on the subject referred to by my hon. friend. It rests with the auditor in any case to decide whether a particular payment is illegal and therefore one to be disallowed. The Board's jurisdiction arises only on an appeal from his decision. A question of this sort was considered in 1898 by the Board and the Secretary of State. The view taken was that the medical officer of an institution to which the section applied would not be entitled to the fee in question, although he received no pay for performing the duty of medical officer.—Mr. BOWLES: Has that changed the procedure prior to 1898?—Mr. GRANT LAWSON: The question had not arisen prior to 1898. That was the decision given in a case then brought before the Board and the Home Office.

Army Medical Department.

Mr. BRODRICK, in reply to a question by Sir JOHN TUKE, said that the warrant bearing on the reconstruction of the Army Medical Department would be issued before the vote for the department was taken.

Influenza among Members.

Mr. DILLON asked the Chancellor of the Exchequer, as acting leader of the House, whether he had turned his attention to the necessity of doing something to disinfect the House against the influenza. The casualty list was already heavy and no Member knew the moment when he might be struck down. He should have imagined that the experience of the members of the Government themselves would have been enough to turn their attention to this matter. He suggested to the Chancellor of the Exchequer the advisability of asking an informal committee of the medical men who were Members of the House to consider the matter and to report whether in their opinion anything could be done to protect themselves and their fellows from this poisonous atmosphere. Failing that he should ask permission to submit a motion that the House should adjourn for a week in order that the House might be disinfected.—Sir MICHAEL HICKS-BEACH said that if any members had suffered from the influenza it was those who sat on the Treasury Bench. If it were possible to find a remedy no Members would be happier than the Ministers, but he was not prepared to say that this House was the only place where they were exposed to infection. He would, however, make inquiries and see whether anything could be done.

Lead-poisoning in the Pottery Trade.

In the course of a debate on this subject Mr. RITCHIE announced that rules have now been agreed upon. They have been submitted to Lord James of Hereford and have received his assent, and the Home Office proposes to circulate them among manufacturers with an expression of the hope that advantage will be taken of them.

MONDAY, MARCH 3RD.

Vaccination Fees.

Mr. CORBIE GRANT asked the President of the Local Government Board whether one of the public vaccinators of the Battle district, Sussex, had charged the guardians fees for the vaccination of certain persons after he had already charged fees to the persons vaccinated for his services; if so, could he state in how many cases this had occurred, and what steps he had taken, or proposed to take, with regard to this public vaccinator, and to prevent the practice occurring elsewhere.—Mr. LONG replied: I understand that the officer referred to in the question included in his register of persons vaccinated for the quarter ended June last the names of three persons for whose vaccination he was paid as their private medical attendant. He thus contravened Section 22 of the Vaccination Act, 1867. On finding this to be the case he appears himself to have drawn the attention of the guardians to the matter and returned to them the fees they had paid him for the three vaccinations. I have only received the officer's explanation within the last few days, and I am still in communication with the guardians on the subject. I have no reason to suppose that the practice complained of prevails, and

it does not seem to me necessary to take any general steps with regard to it. I may point out, however, that in any such case it is open to the guardians to terminate their contract with the public vaccinator by giving him 28 days' notice.

Death after Vaccination.

Mr. CORRIE GRANT asked the President of the Local Government Board if his attention had been called to an inquest before Dr. G. Danford Thomas on Jan. 31st into the death of Mr. Essex after vaccination; was he aware that Mr. Essex was vaccinated on Jan. 15th, and died on the 26th from blood-poisoning; whether the lymph from which he was vaccinated was supplied by the Local Government Board, and whether five other gentlemen vaccinated at the same time from the same lymph were seriously ill; whether the vaccination was from calf lymph No. 1538; and whether anything was known of the history of this lymph.—Mr. LONG replied: The answer as regards the first three points is in the affirmative. The jury at the inquest found that Mr. Essex died from "coma and septic meningitis, the septic condition occurring after vaccination, from some external infection, from natural causes." They added that they were "satisfied that the vaccination was duly and properly performed." By my direction one of the medical inspectors of the Local Government Board attended the inquest and subsequently made further inquiry into the matter, and he concurred in the view taken by the jury. I am not aware that any of the five other persons referred to were seriously ill as suggested. In only two of the cases does there appear to have been any trouble and in both of these the inspector ascertained that the arm was healing satisfactorily. The lymph was from calf No. 1538 and was used in the vaccination of a large number of persons besides those mentioned and no ill-effects have been reported.

London Water Bill.

This Bill was read a second time and referred to a Joint Committee of the two Houses of Parliament, who will have power to hear counsel and witnesses on behalf of the various interests concerned.

TUESDAY, MARCH 4TH.

The Influenza Epidemic.

Mr HENRY HOBHOUSE asked the President of the Local Government Board if, in view of the spread of the influenza epidemic and the uncertainty that prevails as to its causes and conditions, he would consider the appointment of a small commission of experts to investigate and report upon the subject.—Mr. GRANT LAWSON, in the absence of Mr. LONG, replied: The causes and conditions of influenza have already been investigated by the medical staff of the Local Government Board and by experts employed for the purpose, and two lengthy reports on the subject have been issued by the department. In these circumstances it does not appear to me that any good results would follow from a further investigation of the kind suggested by my hon. friend.

Mr. RUTHERFORD asked the First Commissioner of Works if he would make arrangements whereby a sample of the atmosphere of the House during its sitting could be taken for the purpose of analysis and report thereon.—Mr. AKERS-DOUGLAS replied that he had given instructions that this should be done.

Dr. FARQUHARSON asked the right hon. gentleman whether he would take into consideration the advisability of reappointing the select committee which sat on the ventilation and drainage of the House. The committee could take expert evidence and report generally as to the sanitary condition of the House.—Mr. AKERS-DOUGLAS replied that the committee of last session recommended the appointment of a Ventilation Committee, and this recommendation had been acted upon.

The Army Medical Service.

Mr. BRODRICK, in introducing the Army Estimates of the year, made a statement with reference to the reform of the Army Medical Service. Last year, he said, he had the advantage of the assistance of several of the very best civil practitioners in London in drawing up a new scheme for this service. The features of that scheme were that they improved the pay and increased the number of officers. They proposed to give zealous officers the opportunity of leave for study and to provide the means for that, if possible, within the metropolis. They carried out by examinations the principle of promotion by merit, which was all-important in the medical service. They hoped for an interchange with the civil schools by bringing these officers into close touch with the civil schools. They proposed that the continual change of quartering of medical officers should be checked and that as much as possible they should be kept in the same quarters for two years, and they proposed at the beginning of a man's service to attach the man to the battalion and thus to give him a home. He knew that a notice of motion had been given on this subject, but he believed that he should be able to satisfy the House that nothing that the wide experience of civil practitioners could bring to bear on the new system had been lost sight of in drawing it up. With the reform of the medical service was connected the reform of the nursing service, a warrant for which would be issued in a few days. They had got the advantage of the actual and practical assistance as president of the new nursing service of Her Majesty the Queen. He attached great importance to that assistance, not merely from the fact of the exalted position of Her Majesty, but because Her Majesty had a practical knowledge and personal acquaintance with nursing which were enjoyed by few women in the kingdom, and he believed that in selecting nurses for the army service the board which they were about to form would be as efficient a one as could be obtained.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

ADAMS, JOSEPH DIXON, M.D. St. And., M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health by the Yeovil Rural District Council.

AUSTEN, HAROLD, M.D., B.S. Lond., M.R.C.S., L.D.S. Eng., has been appointed Lecturer on Materia Medica to the Royal Dental Hospital of London.

CALEY, J. W., L.R.C.P. Edin., M.R.C.S., has been re-appointed Medical Officer of Health for the Riccall Sub-district of Selby, Yorkshire.

DRINKWATER, JAMES PRATCHETT, M.R.C.S., L.S.A., has been appointed Medical Officer of Health to the Llangollen District Council.

DRYLAND, J. W., M.R.C.S., has been re-appointed Medical Officer of Health to the Kettering Urban District Council.

FULCHER, G. F., M.B., M.S. Edin., has been appointed Medical Officer of Health to the Chingford Urban District Council.

GRIERSON, J. T., M.B., B.Ch. Vict., has been appointed to the City Hospital, Park-hill, Liverpool.

HALL, ALFRED, M.R.C.S., has been re-appointed Medical Officer of Health to the Mayfield Rural District Council, Derbyshire.

HUMPHRY, R., M.R.C.S., L.R.C.P. Edin., has been appointed Medical Officer of Health for the City of Chichester.

MILLER, J., M.R.C.S., L.R.C.P. Lond., has been appointed to the City Hospital, Fazakerley, Liverpool.

MILLER, J. W., M.B., Ch.B. Vict., D.P.H. Cantab., has been appointed Assistant Medical Officer to the City of Liverpool Hospitals for Infectious Diseases.

NESBITT, C., M.D. R.U.I., has been appointed Certifying Surgeon under the Factory Acts for the Randalstown District of the County of Antrim.

SOPER, G. MORGAN, M.R.C.S., L.R.C.P., has been appointed Assistant House Surgeon to the Royal Albert Hospital and Eye Infirmary, Devonport.

SWORDER, E. G., M.B., B.C. Cantab., has been appointed Honorary Medical Officer to the St. Andrews Convalescent Home, Folkestone, vice Cecil Latter, deceased.

SYMONS, ROBERT FOX, M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health for Pretoria and District and Assistant Medical Officer of Health for the Transvaal.

Vacancies.

For further information regarding each vacancy, reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, 77 and 79, Gloucester-street, S.W.—House Surgeon for six months. Board and lodging provided and a gratuity of £5.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeons, unmarried. Salary £150 per annum (with allowance of £30 for cab hire), furnished rooms, fire, lights, and attendance.

BIRMINGHAM TAME AND REA DISTRICT DRAINAGE BOARD.—Bacteriologist. Salary £160 per annum.

BRADFORD POOR-LAW UNION.—First Resident Assistant Medical Officer, unmarried. Salary £125, with rations, apartments, and washing.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRIDGWATER INFIRMARY.—House Surgeon. Salary £80 a year, with board and residence.

BRIGHTON, HOVE, AND SUSSEX THROAT AND EAR HOSPITAL, Church-street, Brighton.—House Surgeon for six months, renewable. Salary at rate of £75 per annum.

BRISTOL GENERAL HOSPITAL.—Assistant House Physician. Salary £70 per annum, with board and residence. Also Assistant House Surgeon.

CARDIFF INFIRMARY.—Assistant House Surgeon, also Assistant House Physician, both for six months, renewable. Salaries at rate of £75 per annum, with board, washing, and apartments.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer. Salary £120, rising to £150, with board, apartments, &c.

DORSET COUNTY HOSPITAL, Dorchester.—House Surgeon. Salary £100, with board and residence.

DUNDEE ROYAL INFIRMARY.—Two Resident Medical Assistants for six months. Salary at rate of £40 per annum, with board and washing.

EAST SUSSEX COUNTY ASYLUM, Hayward's Heath.—Second Assistant Medical Officer and Pathologist, unmarried. Salary £175 per annum, with board, lodging, washing, and attendance.

ESSEX AND COLCHESTER GENERAL HOSPITAL.—House Surgeon. Salary £100 a year, with board, washing, and residence.

FISHERTON ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway, N.—Junior House Physician for six months. Salary at rate of £30 per annum, with board, lodging, and washing.

GREY'S HOSPITAL, Pietermaritzburg, Natal, South Africa.—Resident Medical Superintendent. Salary, £350 first year, £400 second year, with board, lodging, and washing.

JESSOP HOSPITAL FOR WOMEN, Sheffield.—House Surgeon (unmarried). Salary £75 per annum, with board, lodging, &c.

KENT COUNTY OPHTHALMIC HOSPITAL, Maidstone.—House Surgeon. Salary £100, with board and residence.

LANCASHIRE COUNTY ASYLUM, Winwick, Warrington.—Assistant Medical Officer, unmarried. Salary £150 per annum, rising to £200, with apartments, board, attendance, and washing.

LEEDS UNION WORKHOUSE SCHOOLS AND INFIRMARY, Beckett-street, Leeds.—Assistant Medical Officer, unmarried. Salary £130 per annum, rising to £150, with board, washing, apartments, and attendance.

LEICESTER INFIRMARY.—Honorary Assistant Physician.

LIVERPOOL WORKHOUSE, Brownlow-hill.—Assistant Medical Officer, unmarried. Salary £30 per annum, with rations, and fees £20.

LONDON LOCK HOSPITAL, Harrow-road, W.—Anæsthetist.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments and board.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician and House Surgeon, with salary at rate of £40 a year each; Assistant House Physician and Assistant House Surgeon, with salary at rate of £20 a year each. All tenable for six months.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Grafton-street, Tottenham-court-road, W.—Clinical Assistants.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Senior and Junior House Physicians. Salary of former £100 per annum, and of latter £50 per annum. In each case with board and apartments.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary £160.

NOTTINGHAM CHILDREN'S HOSPITAL, Forest House.—House Surgeon, unmarried. Salary £100, with board and residence.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL.—Pathologist. Salary at rate of £100 per annum.

ROYAL BERKSHIRE HOSPITAL.—House Surgeon. Salary £80 per annum. with board, lodging, and washing. Also Assistant House Surgeon. Salary £50 per annum, with board, lodging, and washing. Both for six months.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Ventnor.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging.

ROYAL HALIFAX INFIRMARY.—Second House Surgeon. Also Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

ROYAL SEA BATHING HOSPITAL.—Resident Surgeon as Junior for six months and as Senior for a like period. Salary at rate of £80 and £120 respectively, with board and residence.

SHEFFIELD UNIVERSITY COLLEGE.—Demonstrator in the Bacteriological Laboratory. Salary £150, rising to £200 per annum.

ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM, City-road, London, E.C.—House Surgeon. Salary £80 per annum, with board and lodging.

STOCKPORT INFIRMARY.—Assistant House and Visiting Surgeon. Salary £80 per annum, with board, washing, and residence.

TAUNTON AND SOMERSET HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £60 per annum, with board, lodging, and laundry.

TOTTENHAM HOSPITAL, N.—Honorary Dermatologist. Also two Honorary Anæsthetists.

WEST RIDING ASYLUM, Wadsley, near Sheffield.—Fifth Assistant Medical Officer. Salary £140 per annum, rising to £160, with board, &c.

WILTS COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 a year, rising to £180, with board, residence, attendance, and washing.

Births, Marriages, and Deaths.

BIRTHS.

DOWDING.—On Feb. 25th, the wife of Ernest F. C. Dowding, M.R.C.S., L.R.C.P. Lond., of a son (prematurely).

EDE.—On Feb. 23rd, the wife of G. Hubert Ede, M.D. Aberd., of a daughter.

GREEN.—On March 1st, the wife of Howard Green, M.R.C.S., L.R.C.P. Lond., of a son.

HAWTHORNE.—On Feb. 17th, at "Warrawee," Mudgee, New South Wales, the wife of E. Sydney Hawthorne, F.R.C.S. and L.R.C.P., of a daughter.

KENDALL.—On March 2nd, the wife of Nicholas Fletcher Kendall, M.R.C.S., L.R.C.P. London, of a son.

MOIR.—On Feb. 27th, the wife of Major James Moir, R.A.M.C., M.B., B.S. Aberd., of a son.

TAYLOR.—On Feb. 23rd, the wife of Sidney Johnson Taylor, M.B. Edin., M.R.C.S., of a son.

YOUNG.—At Herbertfield, Hamilton, on the 5th inst., the wife of James Murray Young, M.B. Glasg., of a son.

MARRIAGE.

RAMSAY—CREE.—On Feb. 25th, at the British Residency, Baghdad, Turkish Arabia, Captain G. Ramsay, I.M.S., to Agnes, fourth daughter of the late Mr. W. S. Cree of Glasgow.

DEATHS.

BERDOE.—On Feb. 28th, at Tynemouth House, Victoria-park-gate, N.E., Mary, the dearly-loved wife of Edward Berdoe, M.R.C.S., &c.

FISHER.—On the 1st March, at Sittingbourne, Kent, Caroline Maud Irene, wife of H. Holdrich Fisher, M.D., of influenza, complicating recent confinement.

JOHNSON.—At Rvandale, Tasmania, on Jan. 22nd, John George Johnson, M.R.C.S. Eng., L.R.C.P. Lond., aged 44 years.

KNILL.—On March 2nd, at Heathfield, Bexhill, James Knill, L.R.C.P. Edin., M.R.C.S., aged 68 years.

LOMBE.—On Feb. 23rd, at Torquay, Thomas Robert Lombe, M.D. Aberd., aged 81 years.

MYERS.—On March 3rd, 1902, at Birnam, 1, Kent-gardens, Ealing, W., Laura Isabelle (née Bartlett), the beloved wife of Lieutenant-Colonel H. R. Myers, V.D., late Surgeon 19th Middlesex (Bloomsbury) Rifles. Funeral service at St. Stephen's, West Ealing, on Saturday, 8th inst., at 12.30 P.M. Interment at Highgate (New) Cemetery at 2.30 P.M. Friends will please accept this (the only) intimation.

SIMPSON.—On Feb. 28th, at Darnley-road, W., Maxwell Simpson, M.D., LL.D., F.R.S., in his 87th year.

TALBOT.—On Feb. 23rd, at Dorset County Hospital, Dorchester, Ashley West Talbot, H.S., L.R.C.P. Lond., M.R.C.S. Eng., aged 26 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

CHEAP RATES.

To the Editors of THE LANCET.

SIRS,—The inclosed was lately sent to me in company with a postal order for 2s. 6d. For this munificent fee I was expected to make an examination and report equivalent to that required by a high-class life assurance office. I promptly returned the fee and declined the honour. No wonder the profession is exploited by the public as it is when men can be found to do this sort of work at the price considered adequate. I am, Sirs, yours faithfully,

March 1st, 1902. EAST ENDER.

[INCLOSURE.]

SURREY REFORMED BENEFIT SOCIETY.

Feb. 10th, 1902.

Dear Sir,—An Applicant for Membership of the above Society will wait upon you for Medical Examination. Will you kindly oblige.

Yours respectfully,

A. J. Clemo, Secretary.

SURREY REFORMED BENEFIT SOCIETY.

Office: WALWORTH, LONDON, S.E.

Secretary's Address: A. J. CLEMO, SECRETARY, 171, ALBERT-ROAD, PECKHAM, LONDON, S.E.

MEDICAL REFEREE'S REPORT

On the health of.....Proposed for Membership in the above named Society.

It is requested that as this report is a strictly confidential statement, the Referee will kindly forward it direct to the Secretary, and not to communicate its purport to the Candidate, or to any other person.

The Referee is also requested to obtain the signature of the person to be examined before proceeding with the examination, in order to establish his identity.

I acknowledge that I have this day submitted myself to Dr. ..... for Medical Examination.

Signature .....

Date.....18... *Address*.....

QUESTIONS.

A—What is the personal appearance and general conformation of the candidate?

B—What is his apparent age?

C—Have you any reason to suspect irregular or intemperate habits?

D—Is the candidate the subject of hernia, and, if so, are you satisfied a proper truss is worn?

Has he any physical defect or infirmity?

E—Has the candidate suffered from asthma, bronchitis, gout rheumatic fever, fistula, sexual disorder, or any serious illness? If so, please state date and duration of last attack, and whether in your opinion, the health is affected thereby.

F—Are the veins enlarged in any part, or varicose?

G—Are there any external signs which indicate abscess?

H—Is there any reason to apprehend paralysis, epilepsy, apoplexy, or insanity?

I—Is there any reason to suspect liver or kidney disease?

K—Are the heart and lungs normal in every respect, and perfectly free from disease?

L—Have either parent or any of the brothers or sisters died from phthisis, or is any member of the family now suffering from that disease? If so, please give particulars.

M—Are there any other circumstances connected with the Candidate with which you think the Managers should be made acquainted?

I have this.....day of..... 18... seen and examined..... and am of opinion that he is in.....health, and that his constitution is†..... I therefore‡..... recommend the Managers to accept him as a member.*

Signature of Medical Referee.....

Address.....

* State whether good, indifferent, or bad. † State whether sound or impaired. ‡ Fill in "do not" if you consider case not satisfactory.

*** We agree with our correspondent that 2s. 6d. is not a proper fee for the services demanded of him. Such questions as those marked E or K entail the most complete physical examination of the patient. Four times the fee offered might well be paid for the physical examination and a similar sum for the written report, and then the Surrey Reformed Benefit Society would have been served at a cheap rate.—ED. L.

NEGLIGENCE AND BAD MEAT.

A NORFOLK farmer was recently fined at the Guildhall Police-court £25 and £4 costs for being the owner of a sheep which was deposited in the Central Meat Market for the purpose of sale, being unfit for food. His case differs from ordinary cases of the wilful exposure of unsound meat in that there was nothing to show that the defendant knew, or might have known, that the sheep was diseased, and no evidence that he had seen the carcass after it was slaughtered. Indeed, the defendant gave evidence that he had not seen the carcass and was entirely ignorant of its condition, and the Alderman expressed his belief that this was the case. He pointed out, however, that ignorance in such a case does not constitute a defence in point of law, and the heavy fine inflicted will show owners of dead meat that ignorance avails but little as a plea in mitigation of punishment. The duty, in short, is imposed upon the owner of meat exposed for sale as food to see that it constitutes wholesome food, and the penalty is imposed on those who do not perform that duty, whether the omission is the result of a deliberate determination to pass off good meat as bad or simply of neglect to ascertain its quality.

THE LITERATURE OF CANCER.

To the Editors of THE LANCET.

SIRS,—I should be much obliged if any of your readers could give me references to any old books on cancer, especially to books containing accounts of obsolete methods of treatment.

I am, Sirs, yours faithfully,

March 4th, 1902. F.R.C.S.

THE REV. ROWLAND HILL AND VACCINATION.

THE Cardiff *Western Mail* of Feb. 28th contains the following paragraph under the heading "Interesting Items of News Current 100 Years Ago."

> "August, 1807.—The Rev. Rowland Hill, who had been preaching to very large congregations at Haverfordwest and its vicinity, has also continued his efforts to promote the vaccine inoculation with success. During this and a former visit about two years ago he has applied the protecting lancet to no less than 1500 subjects. After the most diligent inquiry not one instance of failure has yet been recorded."

THE YARMOUTH BOARD OF GUARDIANS AND THEIR WORKHOUSE MEDICAL OFFICER.

THE relations of the Yarmouth Board of Guardians to their workhouse medical officer are at present peculiar. The issues are rather confused, but from the report in the *Yarmouth Mercury* of Feb. 22nd of the meeting of the guardians held on Feb. 17th the matter appears to stand thus. A sub-committee had been appointed to consider the medical officer's contract. Under this contract he received £140 per annum, the board finding instruments and appliances. The sub-committee recommended that the medical officer, Dr. H. Collier, should in future provide his own instruments and appliances, but that his salary should be increased by £25, making it up to £165. The report of the sub-committee on being presented to the board was negatived by 11 votes to seven. The chairman then moved that the altered contract be approved, but that no increase in salary be given. This was agreed to, so that now apparently Dr. Collier will have to provide his own instruments and appliances and still get only £140 per annum. We await developments with interest.

Abernethian.—We are not prepared to give a legal opinion. A legal decision would depend upon the terms of contract as settled by any letters between the parties, and perhaps by evidence as to custom. We can only recommend that no steps should be taken before consulting a lawyer. We would point out that there ought to be no disposition to exact the uttermost from the employer; he appears to have had to pay his sick assistant, his sick locum-tenent, and his sound locum-tenent all at the same time.

Inquirer (1).—A Manual of School Hygiene, by Edward W. Hope, M.D., and Edgar A. Browne, F.R.C.S. Edin., Cambridge University Press, 1901, price 3s. 6d. School Hygiene, by Edgar R. Shaw, Professor of the Institute of Pedagogy, New York University, Macmillan and Co., London and New York, price 4s. 6d. Handbuch der Schulhygiene, von Dr. Adolf Baginsky, published by Ferdinand Enke. 1898.

Medical.—The General Medical Council have definitely stated their objection to medical aid associations where canvassing is carried on, and have acted upon their objection. If there is no canvassing the Council might see no harm in the clubs in question; yet to act as medical officer to them might not be in the interests of the public, the medical profession, or the medical officer.

Inquirer (2).—If our correspondent will send us the rules, prospectus, &c., of the association we will advise him in the matter. Hardly any medical aid association is to be completely commended from a professional point of view, but some are better than others.

Venienti occurrite morbo.—The idea is thoroughly sound and has been tried, but unfortunately the preventive, to be strong enough to do its work, is sure to have sufficient irritative properties to make it uncomfortable for constant and regular application.

Morality.—We should point out that the main question is one which the persons concerned must answer for themselves. To give advice is practically to allow that something should be done, an attitude which a medical man must be chary of adopting.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (2 P.M.).

TUESDAY (11th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

WEDNESDAY (12th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.).

THURSDAY (13th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.).

FRIDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), City Orthopædic (2.30 P.M.).

SATURDAY (15th).—Royal Free (9 A.M. and 2 P.M.), London (2 P.M.) Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.), Throat, Golden-square (9.30 A.M.)

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (10th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Papers:—Mr. A. M. Sheild: A Series of Cases of External Operations on the Larynx.—Mr. C. Mansell Moullin: Three Cases of Gastrotomy for Recent Gastric Ulcer.

TUESDAY (11th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Mr. C. Ballance and Dr. P. Stewart: Clinical and Experimental Observations introducing a Discussion on the Regeneration of Peripheral Nerves (with lantern and microscopical demonstrations). (Adjourned discussion.)

CHELSEA CLINICAL SOCIETY (Jenner Institute of Preventive Medicine, Chelsea-gardens, Grosvenor-road, S.W.).—8.30 P.M. Annual Clinical Debate:—Cancer, its Nature, Origin, and General Principles of Treatment. The following, among others, will take part in the discussion—Dr. J. F. Payne (who will open the debate), Dr. J. F. W. Tatham, Prof. R. T. Hewlett, Dr. Beatson (Glasgow), Dr. J. Galloway, Dr. H. R. Gaylord (New York) (Communication on Cancer in Swine, with lantern slides).

WEDNESDAY (12th).—DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Demonstration of Cases of Interest.

HUNTERIAN SOCIETY (London Institution, Finsbury Circus, E.C.),—8.30 P.M. Pathological Evening.

THURSDAY (13th).—BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Specimens will be shown by Mr. F. Jordan and Mr. R. O'Callaghan. Papers:—Mr. Freyer (introduced): Stone in the Female Bladder.—Also by Dr. E. T. Collins.

FRIDAY (14th).—CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Mr. H. W. Page, Dr. Payne, and Dr. Poynton: Two Cases of Arthritis of the Knee.—Dr. W. H. White and Dr. W. C. Pakes: A Case of Malignant Endocarditis giving Widal's Reaction.—Sir Thomas Barlow, Bart., and Dr. H. B. Shaw: Hypertrophic Cirrhosis of the Liver.—Mr. A. E. Sears: Acute Paralytic Dilatation of the Stomach.

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH (9, Adelphi-terrace, Strand, W.C.)—7.30 P.M. Paper:—Dr. J. R. Kaye: Scarlet Fever, How Far Statistics Prove or Disprove the Utility of Hospital Isolation.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—Cases will be shown by Mr. Hartridge and Mr. Harman and Mr. Bradburne. Papers:—Mr. R. L. Knaggs: Symmetrical Concentric Changes of Choroid and Retina in Four Cases of Unusually High Myopia.—Mr. W. H. H. Jessop: Membranous Conjunctivitis with Cases.—Mr. S. Stephenson: Diphtheria of the Conjunctiva.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION (11, Chandos-street, Cavendish-square, W.).—4 P.M. Cases will be shown by Mr. M. Collier, Dr. McCall, and the President. 5 P.M. Discussion on the Diagnosis and Treatment of Various Forms of Nerve Deafness (opened by Dr. D. Grant and continued by Dr. G. MacDonald, Dr. B. Baron, and others) .7.30 P.M. Annual Dinner at the Café Royal.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (10th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: Organs of Respiration.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. J. Pringle: Clinique. (Skin.)
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Saunders: Therapeutics.
TUESDAY (11th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. G. F. Still: Some Abnormal Psychical Conditions in Children. (Goulstonian Lecture.)
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. Ewart: Clinique. (Medical.)
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Ball: Diseases of the Tonsils.
NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Mr. Gunn: Visual Fields in Diagnosis.
WEDNESDAY (12th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: Organs of Respiration.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. E. W. Roughton: Clinique. (Surgical.)
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Some Functional Disorders.
THURSDAY (13th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. F. T. Roberts: The Comprehensive Study of Thoracic Phthisis. (Lumleian Lectures.)
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson, jun.: Clinique. (Surgical.)
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Davis: Medical Anatomy and Physical Diagnosis.
THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Mr. S. Colyer: Oral Sepsis in Children.
CHARING-CROSS HOSPITAL.—4 P.M. Mr. Gibbs: Surgical Cases. (Post-Graduate Course.)
FRIDAY (14th).—ROYAL COLLEGE OF SURGEONS OF ENGLAND.—5 P.M. Prof. C. Stewart: Organs of Respiration.
MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Clinique. (Ear.)
POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Shuter: Treatment of a few Effects from Anæsthetics.

EDITORIAL NOTICES.

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. II. of 1901, which was completed with the issue of Dec. 28th, and the Title-page to the Volume, were given in THE LANCET of Jan 4th.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1901 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewardt's Instruments).

THE LANCET Office, March 6th, 1902.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
Feb. 28	29·45	S.W.	0·01	68	53	46	47	48	Cloudy
Mar. 1	29·59	E.	0·01	66	53	41	42	43	Hazy
,, 2	29·75	S.W.	...	70	52	43	44	44	Cloudy
,, 3	30·01	S.W.	0·06	69	52	40	44	45	Overcast
,, 4	30·06	S.	...	60	46	41	40	41	Overcast
,, 5	30·07	S.E.	...	57	46	36	36	37	Foggy
,, 6	30·02	S.W.	...	42	40	36	37	37	Foggy

During the week marked copies of the following newspapers have been received:—*Eastern Province Herald (Port Elizabeth, Cape of Good Hope), Manchester Evening News, Yorkshire Post, Cardiff Mail, Sheffield Independent, Sussex Daily News, Walton Gazette, Willshire Mirror, Bradford Observer, Morning Post, Essex Herald, Newcastle Journal, Cambria Leader, Hereford Mercury, Exeter Times, Penrith Observer, Daily Graphic, Cambridge Chronicle, Huddersfield Examiner, Sanitary Record, Local Government Chronicle, Mining Journal, Merthyr Express, Hertfordshire Mercury, Burton Chronicle, Dundee Advertiser, West Sussex Gazette, Lincolnshire Advertiser, Barking Advertiser, Bolton Chronicle, Liverpool Mercury, Manchester Evening Mail, Kent Messenger, Middlesbrough Gazette, Birmingham Post, Aberdeen Press, Heraldo de Madrid, Meath Herald, Folkestone Telegraph, Hartlepool Mail, Brighton Gazette, Kent Examiner, Suffolk Chronicle, Surrey Advertiser, Bristol Mercury, Dublin Express, Darlington Star, Times of India, &c.*

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